

Math. P.

120^m

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Einste, Lepp.

120^m

Sehnen-Tafeln

für

den Radius oder $r = 1000$,

enthaltend

die zur Bestimmung aller Winkel von 0° bis 180° von Minute zu Minute erforderlichen Sehnen und auch die Proportional-Theile, durch welche die Winkel bis auf einzelne Secunden angegeben werden können; nebst einer Gebrauchsanweisung.

Ein

zuverlässiges und äusserst einfaches Hilfsmittel

für

Architekten, Forstbeamte, Geometer, Gnomoniker, Ingenieure, sowie für Lehrer und Schüler an Gewerb- und polytechnischen Schulen und überhaupt für alle diejenigen, welche sich mit Messung der Winkel und mit Construction gemessener Winkel beschäftigen und welchen Astrolabien, Transporteure etc. zu wenig Genauigkeit gewähren.

Von

Leopold Einsle,

königl. bayer. Geometer.

Motto: Numerata durant.

Mit einer Figurentafel.

Augsburg, 1849.

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332. 2

Sehnen-Tafeln

1843

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enthaltend

die zur Bestimmung aller Winkel von 0° bis 180° von Minute zu Minute erforderlichen Sehnen und auch die Proportional-Theile, durch welche die Winkel bis auf einzelne Sekunden angegeben werden können; nebst einer Gebrauchsanweisung.

Ein

zuverlässiges und höchst nützliches Hilfsmittel

Manche Praktiker befinden sich noch immer in Faust's Lage:

Was man nicht weiss, das eben brauchte man;

Und was man weiss, kann man nicht brauchen.

Architekten, Forstbeamte, Geometer, Geodäten, Ingenieure, sowie für Lichter und Schiffer an Gewässern und polystenischen Schulen und überhaupt für alle diejenigen, welche sich mit Messung der Winkel und mit Construction gemessener Winkel beschäftigen und welchen Astronomie, Transportirung etc. an wenig Genauigkeit gewöhnt.



Mit einer Figurentafel.

Augsburg, 1843.

Druck und Verlag der J. Neumann'schen Buchhandlung.

Vorrede und instruktive Einleitung.

Architekten, Forstbeamte, Geometer, Ingenieure etc. kommen gar oft in den Fall, Winkel messen oder gemessene Winkel prüfen und construiren (auftragen) zu müssen. Hiezu gibt es wohl kein einfacheres und zuverlässigeres Hilfsmittel, als Sehnen-Tafeln; denn mit solchen Tafeln in der Hand kann man mittelst einer einfachen Messlatte oder Messkette jeden Winkel sehr genau messen, viel genauer als mit einem Astrolabium, mit einer Boussole etc. *)

Auch können gemessene Winkel mittelst solcher Tafeln, einem Zirkel und einem verjüngten Massstabe viel genauer aufgetragen werden als mit dem besten Transporteur. Nun aber kostet ein Transporteur bester Art 55 fl., eine Ausgabe, die wohl jeder vermeiden wird, welcher weiss, dass er mit ganz wohlfeilen Sehnen-Tafeln eben so schnell und viel genauer zum Ziele gelangt, und überdiess mittelst solcher Tafeln sogar Winkel möglichst genau messen, also einen doppelten Zweck erreichen kann.

Aus dieser Ursache hat sich der Verfasser daran gemacht, Sehnen-Tafeln von 0° bis 180° zu berechnen. Obwohl die Sehnens der stumpfen Winkel mindere Genauigkeit zu deren Bestimmung dar-

*) In dem mathematisch-mechanischen Institute von Ertel und Sohn zu München werden möglichst vollkommene Winkel-Instrumente verfertigt. Ein solches Winkelinstrument (Theodolit) kostet aber 300 bis 800 fl.

Auch werden daselbst 5 verschiedene Transporteure verfertigt, nämlich:

- 1) Transporteur, kreisförmiger, von Messing und 7 Zoll Durchmesser mittelst eines Nonius auf silbernen Limbus in Minuten getheilt und mit einer Micrometer-Schraube versehen. Preis 55 fl.
- 2) Transporteur, kreisförmiger, wie der vorhergehende, ohne Micrometer-Schraube und auf Messing getheilt. Preis 44 fl.
- 3) Transporteur, halbkreisförmiger, von Messing und 6 Zoll Durchmesser, in halbe Grade getheilt. Preis 7 fl.
- 4) Transporteur, halbkreisförmiger, von Messing und 5 Zoll Durchmesser, in halbe Grade getheilt. Preis 6 fl.
- 5) Transporteur, halbkreisförmiger, von Messing und 4 Zoll Durchmesser, in ganze Grade getheilt. Preis 3 fl.

bieten, so wurden sie doch auch für diese Winkel berechnet, und zwar hauptsächlich für Gnomoniker (Sonnenuhren-Verfertiger) zur Auftragung der Stundenwinkel; auch werden sie zur Controll (oder Ergänzung) der spitzigen Nebenwinkel dienlich und in Fällen, wo man die spitzigen Nebenwinkel nicht messen kann, sogar zur Messung der stumpfen Winkel nothwendig sein, besonders aber zur Absteckung gegebener Winkel auf dem Felde.

Vorliegenden Tafeln ist eine solche Einrichtung gegeben worden, dass sie nicht nur leicht übersichtlich sind und daher mit grosser Bequemlichkeit gebraucht werden können, sondern sie haben auch ein solches Format erhalten, dass sie mit Vega's logarithmisch-trigonometrischem Handbuche neuester Ausgabe (neu herausgegeben von Dr. J. A. Hülse) in einen Band gebunden werden können.

Die Gebrauchsanweisung glaubte der Verfasser nicht besser als durch Beispiele geben zu können, daher

Erstes Beispiel.

Auf dem Feld ist ein Winkel sichtbar (abgesteckt); es soll die Grösse desselben gemessen werden.

Ist auf dem Felde der Winkel ABC sichtbar (den wir auf dem Papiere durch Figur Nr. 1 versinnlichen wollen), so misst man von B in der Richtung nach A mit möglichster Genauigkeit 1000 Fuss.

Eben so misst man 1000 Fuss von B in der Richtung nach C.

Endlich misst man die Sehne AC; diese sei = 617 Fuss 1 Zoll (dec.)

Nun sucht man in den Tafeln die Grösse der Sehne, wobei zwei Fälle möglich sind, nämlich

α) entweder ist die gemessene Sehne genau in den Tafeln enthalten, oder

β) sie ist nicht genau in den Tafeln enthalten.

Ist die gemessene Sehne genau in den Tafeln enthalten, so sind die oben stehenden Grade (°) und die links stehenden Minuten (M.) die gesuchte Grösse des gemessenen Winkels; findet sich dagegen die gemessene Sehne nicht genau in den Tafeln (wie es meistens der Fall ist), so nimmt man die nächst kleinere Sehne und subtrahirt diese von der gemessenen.

In vorliegendem Beispiele ist die

gemessene Sehne = 617,1000

nächst kleinere = 616,9272 (auf Seite 12).

Unterschied = 1728 (als ganze Zahl betrachtet).

Der nächst kleineren Sehne entspricht der Winkel 35 Grad 56 Minuten oder $\angle = 35^{\circ} 56'$.

Hiezu kommen noch die Secunden ("), welche sich ergeben,

wenn man obigen Unterschied (1728) mit der Differenz für 1 Secunde (d. 1'') dividirt *), daher

$$1728:46,10=172800:4610=17280:461=37'';$$

folglich für die gemessene Sehne ist der entsprechende $\sphericalangle = 35^{\circ} 56' 37''$.

Anmerkung 1) Ist das Terrain (Land) so beschaffen, dass man auf den Schenkeln AB und BC (Fig. 1.) nicht 1000 Fuss messen kann, so misst man nur 100 Fuss, wornach man aber auch in den Sehnen-Tafeln das Komma (in Gedanken) um eine Stelle nach der Linken verrücken muss.

*) Oder man könnte statt der Fusse mit Zollen messen.

**) Es ist ganz einerlei, ob die Längen mit dem Pariser Masse, oder mit dem rheinländischen (preussischen) Masse, oder mit dem bayer. Masse etc gemessen werden; ja man könnte in Ermangelung eines bestimmten Masses eine Latte nach Belieben in eine gewisse Anzahl gleicher Theile theilen und sie als Mass (Massstab) gebrauchen.

Anmerkung 2) Ist der $\sphericalangle ABC$ der auswärtsspringende Winkel eines jungen Laubwaldes, so dass die Sehne AC durchgelichtet (durchgehauen) werden müsste, diess aber vermieden werden wollte, so könnte der Winkel dadurch gemessen werden, dass

α) entweder die beiden Schenkel rückwärts verlängert werden und der hiedurch entstandene (gleiche) Scheitel-Winkel DBE gemessen wird (Fig. 2.);

β) oder es wird nur ein Schenkel rückwärts verlängert und der hiedurch entstandene Nebenwinkel DBC gemessen (Fig. 3.); wird nun das Resultat von 180° subtrahirt, so gibt der Rest den gesuchten $\sphericalangle ABC$.

*) Wird der hiedurch entstandene Winkel ein stumpfer, so wäre es zur Erreichung einer grösseren Genauigkeit jedoch besser, wenn der gegebene spitzige Winkel direkte gemessen werden könnte.

**) Ist überhaupt der zu messende Winkel ein stumpfer, so wird dessen Grösse mit mehr Genauigkeit gefunden, wenn man einen Schenkel rückwärts verlängert, den hiedurch entstandenen spitzigen Nebenwinkel misst und das Resultat von 180° subtrahirt.

Zweites Beispiel.

Einen in Graden und Minuten gegebenen Winkel auf dem Felde abzustecken.

Ist z. B. der gegebene $\sphericalangle = 51^{\circ} 20'$ und soll derselbe auf dem Felde abgesteckt werden, so zerfällt diese Aufgabe in zwei Theile, nämlich in Hausarbeit und Feldarbeit.

Hausarbeit.

Die Hausarbeit zerfällt ferner in folgende Momente:

a) Man multiplicirt den gegebenen Winkel mit 2, daher

$$51^{\circ} 20' \times 2 = 102^{\circ} 40'$$

*) Die treffenden Secunden kann man auch ohne die Proportional-Theile (nämlich ohne die d. 1'') auf folgende Weise berechnen:

a) Es ist die nächst grössere Sehne in den Tafeln = 617,2040 (für $35^{\circ} 57'$)

kleinere - - - - - = 616,9272 (für $35^{\circ} 56'$)

$$(a) \text{ Differenz} = 2768$$

b) Es ist die gemessene Sehne = 617,1000

Die nächst kleinere Sehne ist in den Tafeln = 616,9272 (für $35^{\circ} 56'$)

$$(b) \text{ Differenz} = 1728$$

Aus den beiden Differenzen (a und b) kann man die Proportion bilden:

$$2768 : 1728 = 60'' : x''$$

$$\text{also } x = \frac{1728 \times 60}{2768} = 37'',456 = 37'',5 \text{ oder in runder Zahl} = 38''.$$

Wenn man durch diese Methode ein anderes Resultat erhält, so ist dieses als das Genauere anzunehmen.

b) Man suche für den hiedurch erhaltenen Winkel ($= 102^{\circ} 40'$) in den Tafeln die entsprechende Sehne; diese ist $= 1561,588$ (auf Seite 35).

c) Man dividire die gefundene Sehne mit 2, daher

$$1561,588 : 2 = 780,794.$$

d) Das dadurch erhaltene Resultat ($= 780,794$ oder in runder Zahl $= 781$) ist die eine Kathete (b) eines rechtwinklichten Dreieckes, dessen Hypothenuse oder $a = 1000$ ist (Fig. 5.)

e) Aus der Hypothenuse (a) und der einen Kathete (b) wird nun die andere Kathete (x) berechnet; denn nach dem Pythagoräischen Lehrsatz ist:

$$x = \sqrt{a^2 - b^2*})$$

$$= \sqrt{1000^2 - 780,794^2}$$

$$= 624,7885 \text{ (abgerundet } = 625).$$

Feldarbeit.

Die Feldarbeit (welche wir uns durch Figur Nr. 4 versinnlichen wollen), zerfällt in folgende Momente:

a) Man nehme den Punkt B als Scheitel an und stecke eine gerade Linie ab in der Richtung von B nach A, wodurch man die Richtung des einen Schenkels erhält.

b) Man messe von B nach A so viel, als man für x durch Rechnung (oder Aufschlagen) gefunden hat, also in vorliegendem Beispiele 625 Fuss, wodurch der Punkt D bestimmt wird; denn $BD = 625'$.

c) Im Punkte D wird ein Perpendikel errichtet und so lang gemacht, als die Hälfte der Sehne es angibt, also in vorliegendem Beispiele 781 Fuss, wodurch der Punkt C bestimmt wird; denn $CD = 781'$.

d) Endlich wird von B in der Richtung nach C eine gerade Linie abgesteckt, wodurch man die Richtung des anderen Schenkels für den abzusteckenden Winkel ABC erhält, folglich ist $\angle ABC = 51^{\circ} 20'$.

Anmerkung 1) Enthält der abzusteckende Winkel auch noch Secunden, ist sohin z. B. der $\angle = 51^{\circ} 20' 35''$ gegeben, so ist für die Hausarbeit (a bis c) folgendes zu merken:

α) Man multiplicire den gegebenen Winkel wie vorher mit 2, daher

$$51^{\circ} 20' 35'' \times 2 = 102^{\circ} 41' 10''.$$

*) Die eine Kathete (b) ist nichts anderes, als der sinus des gegebenen Winkels (in vorliegendem Beispiele $\angle 51^{\circ} 21'$), während die andere Kathete (x) der cosinus des nämlichen Winkels ist; wer also Tafeln besitzt, worin die wirkliche Länge der trigonometrischen Linien (sinus und cosinus) enthalten ist, kann sich obige Berechnung ersparen, indem er nur für b den sinus und für x den cosinus des gegebenen Winkels aufzusuchen braucht. Solche Tafeln existiren mehrere:

1) Sammlung mathematischer Tafeln von Vega, neu herausgegeben von Dr. J. A. Hulsse, Leipzig bei Weidmann 1840. Preis 6 fl. 18 kr.

2) Adrian Vlacq's trigonometrische und logarithmische Tafeln. Neu durchgesehen von Nordmann, Leipzig bei Friedrich Fleischer 1821. Preis 1 fl. 48 kr.

3) Logarithmisch-trigonometrisches Handbuch von Joseph Hantschel. Wien 1833. Preis 1 fl. 12 kr. u. a.

Wer solche Tafeln besitzt, in welchen die wirkliche Länge der sinus enthalten ist, kann sich selbst Sehnen-Tafeln berechnen oder die berechneten controlliren; denn multiplicirt man den sinus des halben Winkels mit 2, so erhält man die Sehne des ganzen Winkels. Soll z. B. für einen Winkel oder Bogen von $40^{\circ} 36'$ die entsprechende Sehne berechnet werden, so verfähre man also:

$$40^{\circ} 36' : 2 = 20^{\circ} 18';$$

$$\text{nun aber ist der sinus des } \angle 20^{\circ} 18' = 346,9357 \text{ (für } r = 1000)$$

$$\times 2 = \times 2$$

$$\text{also Sehne des } \angle 40^{\circ} 36' = 693,8714 \text{ (für } r = 1000)$$

β) Man suche für den hiedurch erhaltenen Winkel ($= 102^{\circ} 41' 10''$) in den Tafeln die entsprechende Sehne. Nun aber ist diese nicht genau zu finden, daher nehme man die Sehne nur für die Grade und Minuten; diese ist für $\angle 102^{\circ} 41' = 1561,770$ (Seite 35).

γ) Dann multiplicire man die Secunden ($10''$) mit der nächst kleineren Differenz für 1 Secunde (d. $1''$), welche $= 3,03$, daher $10 \times 3,03 = 30,3$.

δ) Ferner wird das erhaltene Produkt zu der (sub β) gefundenen Sehne addirt, somit

$$\begin{array}{r} 1561,770 \\ + 30 \\ \hline = 1561,800 \end{array}$$

ε) Endlich wird die so gefundene Sehne ($= 1561,8$) mit 2 dividirt, daher $1561,8 : 2 = 780,9$ oder in runder Zahl $= 781$.

Das noch übrige Verfahren bleibt dasselbe, wie es im dritten Beispiele sub d und e gezeigt wurde, während die Manipulation auf dem Felde ganz dieselbe bleibt.

Anmerkung 2) Ist der abzusteckende Winkel ein stumpfer, so muss sein spitziger Nebenwinkel abgesteckt und hernach ein Schenkel rückwärts verlängert werden, wodurch man den verlangten stumpfen Winkel erhält. Ist z. B. der abzusteckende Winkel $= 135^{\circ} 28'$, so ist sein spitziger Nebenwinkel ($180^{\circ} - 135^{\circ} 28' =$) $44^{\circ} 32'$, welcher nach der oben gegebenen Belehrung abgesteckt wird.

Bei Eisenbahn-Kurven ist der Winkel, welchen die Tangenten in ihrem Durchschnittspunkte bilden, gewöhnlich ein stumpfer, alsdann ist sein Nebenwinkel, welcher jedesmal dem Centri-Winkel gleich ist, spitzig.

Drittes Beispiel.

Einen gemessenen oder gegebenen Winkel zu construiren.

Ist der gemessene oder gegebene Winkel $= 38^{\circ} 25'$ und soll derselbe aufgetragen oder zu Plan gebracht werden, so verfähre man (wie es durch die Figur Nr. 5 versinnlicht wird) also:

a) Man ziehe mit einer Nadel oder mit einem feingespitzten Bleistifte eine gerade Linie AB.

b) Man nehme den Endpunkt B als Scheitel des zu construierenden Winkels an und beschreibe aus demselben mit einer Zirkel-Oeffnung (Radius) $= 1000$ einen Kreisbogen so, dass die Linie AB im Punkte C durchschnitten wird.

c) Ferner suche man in den Tafeln (Seite 13) für den gegebenen Winkel ($38^{\circ} 25'$) die entsprechende Sehne, welche $= 658,0078$ (abgerundet $= 658$); diese Sehne wird auf einem verjüngten Maassstabe in Zirkel *) genommen und aus dem Durchschnittspunkte C der Kreisbogen in D durchschnitten.

d) Endlich wird von B nach D eine gerade Linie BD gezogen, wornach der Winkel ABD der verlangte ist.

Anmerkung 1) Ist der gegebene Winkel ein stumpfer, so wird die Construction genauer, wenn man seinen spitzigen Nebenwinkel aufträgt, weil bei sehr stumpfen Winkeln die Sehne sehr gross ist, daher der Zirkel sehr weit geöffnet **) werden muss, und weil die beiden Schenkel sehr schief durchschnitten werden.

*) Auf demselben Maassstabe, auf welchem der Radius 1000 in Zirkel genommen wurde.

**) Wenn ein Stangenzirkel angewendet wird, so fällt dieser Grund weg.

Anmerkung 2) Ist ein construirter (aufgetragener) Winkel zu prüfen oder auf dem Plane zu messen, so werden mit einer Zirkel-Oeffnung (Radius) = 1000 aus dem Scheitel die beiden Schenkel durchschnitten; die Entfernung der Durchschnittpunkte werden alsdanu in Zirkel genommen und auf dem Maassstabe die Sehne gemessen. Diese gibt aus den Tafeln die Grösse des Winkels.

*) Wer mit einem prismatischen Maassstabe versehen ist, messe vom Scheitel auf jedem der beiden Schenkel 1000 Theile und bemerke die Endpunkte dieser Theile (in Fig. 6 die Punkte C und D) durch Einstiche oder Bleistiftspunkte; endlich wird mit demselben Maassstabe die Entfernung der beiden Einstiche oder Bleistiftspunkte gemessen, welche (Entfernung) die Sehne ist und als solche mittelst der Tafeln die Grösse des Winkels angibt.

Anm. 3) Wenn man einen beliebigen Radius annimmt und für diesen die Sehne misst, so kann man aus diesen Grössen die Sehne für den Radius 1000 berechnen.

Hat man z. B. beim Winkelmessen auf dem Felde den Radius 500 angenommen, d. h. hat man (Fig. 1.) von B nach A 500 und von B nach C gleichfalls 500 Fuss und dann die Sehne AC zu 308,55 Fuss gemessen; so ist die Reduktion auf unsere Tafeln oder auf den Radius = 1000 folgende:

$$500 : 1000 = 308,55 : x$$

$$\text{also } x = \frac{1000 \times 308,55}{500} = 617,1 \text{ Fuss als Sehne für } r = 1000.$$

Und so bleibt dem Berechner und Herausgeber nur mehr der Wunsch übrig, es möchten diese Sehnentafeln den beabsichtigten Nutzen vielfältig bringen, wodurch er für seine nicht geringe Mühe hinreichend belohnt sein würde.

Beispiel.

Einem gemessenen oder gegebenen Winkel zu construirem.

Ist der gemessene oder gegebene Winkel = $38^{\circ} 25'$ und soll derselbe aufgetragen oder zu Plan gebracht werden, so verfähre man (wie es durch die Figur Nr. 5 veranschaulicht wird) also:

a) Man ziehe mit einer Nadel oder mit einem feingespitzten Bleistifte eine gerade Linie AB.

b) Man nehme den Endpunkt B als Scheitel des zu construirenden Winkels an und beschreibe aus demselben mit einer Zirkel-Oeffnung (Radius) = 1000 einen Kreisbogen so, dass die Linie AB im Punkte C durchschnitten wird.

c) Ferner suche man in den Tafeln (Seite 13) für den gegebenen Winkel ($38^{\circ} 25'$) die entsprechende Sehne, welche = 658,0078 (abgerundet = 658); diese Sehne wird auf einem verjüngten Maassstabe in Zirkel *) genommen und aus dem Durchschnittpunkte C der Kreisbogen in D durchschnitten.

d) Endlich wird von B nach D eine gerade Linie BD gezogen, wonach der Winkel ABD der verlangte ist.

Anmerkung 1) Ist der gegebene Winkel ein stumpfer, so wird die Construction genauer, wenn man seinen spitzen Nebenwinkel anträgt, weil bei sehr stumpfen Winkeln die Sehne sehr gross ist, daher der Zirkel sehr weit geöffnet werden muss, und weil die beiden Schenkel sehr schiel durchschnitten werden.

*) Auf demselben Maassstabe, auf welchem der Radius 1000 in Zirkel genommen wurde.
 **) Wenn ein Stangenwinkel angewendet wird, so fällt dieser Grund weg.

0°			1°			2°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	0,0000	48,48	0	17,4530	48,47	0	34,9048	48,47
1	0,2909		1	17,7438		1	35,1956	
2	0,5818		2	18,0348		2	35,4864	
3	0,8727		3	18,3256		3	35,7772	
4	1,1636		4	18,6166		4	36,0682	
5	1,4544		5	18,9074		5	36,3590	
6	1,7453		6	19,1984		6	36,6498	
7	2,0362		7	19,4892		7	36,9406	
8	2,3271		8	19,7800		8	37,2316	
9	2,6181		9	20,0708		9	37,5224	
10	2,9089		10	20,3618		10	37,8132	
11	3,1998		11	20,6526		11	38,1040	
12	3,4907		12	20,9436		12	38,3948	
13	3,7815		13	21,2344		13	38,6856	
14	4,0724		14	21,5254		14	38,9766	
15	4,3633		15	21,8161		15	39,2674	
16	4,6542		16	22,1070		16	39,5582	
17	4,9451		17	22,3978		17	39,8490	
18	5,2360		18	22,6888		18	40,1398	
19	5,5268		19	22,9796		19	40,4306	
20	5,8178		20	23,2706		20	40,7216	
21	6,1086		21	23,5614		21	41,0124	
22	6,3996		22	23,8522		22	41,3032	
23	6,6904		23	24,1430		23	41,5940	
24	6,9814		24	24,4340		24	41,8848	
25	7,2721		25	24,7248		25	42,1756	
26	7,5630		26	25,0158		26	42,4664	
27	7,8539		27	25,3066		27	42,7572	
28	8,1448		28	25,5974		28	43,0482	
29	8,4356		29	25,8882		29	43,3390	
30	8,7266		30	26,1792		30	43,6298	
31	9,0174		31	26,4700		31	43,9206	
32	9,3084		32	26,7610		32	44,2114	
33	9,5992		33	27,0518		33	44,5022	
34	9,8902		34	27,3426		34	44,7930	
35	10,1809		35	27,6334		35	45,0838	
36	10,4720		36	27,9244		36	45,3746	
37	10,7627		37	28,2152		37	45,6654	
38	11,0536		38	28,5060		38	45,9562	
39	11,3444		39	28,7968		39	46,2470	
40	11,6354		40	29,0878		40	46,5380	
41	11,9262		41	29,3786		41	46,8288	
42	12,2172		42	29,6696		42	47,1196	
43	12,5080		43	29,9604		43	47,4104	
44	12,7990		44	30,2512		44	47,7012	
45	13,0898		45	30,5420		45	47,9920	
46	13,3808		46	30,8330		46	48,2828	
47	13,6716		47	31,1238		47	48,5736	
48	13,9626		48	31,4146		48	48,8644	
49	14,2534		49	31,7054		49	49,1552	
50	14,5442		50	31,9964		50	49,4460	
51	14,8350		51	32,2872		51	49,7368	
52	15,1260		52	32,5780		52	50,0276	
53	15,4168		53	32,8688		53	50,3184	
54	15,7078		54	33,1598		54	50,6092	
55	15,9986		55	33,4506		55	50,9000	
56	16,2896		56	33,7414		56	51,1908	
57	16,5804		57	34,0322		57	51,4816	
58	16,8714		58	34,3232		58	51,7724	
59	17,1622		59	34,6140		59	52,0632	
60	17,4530		60	34,9048		60	52,3538	

3 ^o			4 ^o			5 ^o		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	52,3538	48,47	0	69,7990	48,45	0	87,2388	48,43
1	52,6446		1	70,0898		1	87,5294	
2	52,9354		2	70,3804		2	87,8200	
3	53,2262		3	70,6712		3	88,1106	
4	53,5170		4	70,9618		4	88,4012	
5	53,8078		5	71,2526		5	88,6918	
6	54,0986		6	71,5432		6	88,9824	
7	54,3894		7	71,8340		7	89,2730	
8	54,6802		8	72,1246		8	89,5636	
9	54,9710		9	72,4154		9	89,8542	
10	55,2618		10	72,7060		10	90,1448	
11	55,5526		11	72,9968		11	90,4354	
12	55,8432		12	73,2874		12	90,7260	
13	56,1340		13	73,5782		13	91,0166	
14	56,4248		14	73,8688		14	91,3072	
15	56,7156		15	74,1596		15	91,5978	
16	57,0064		16	74,4502		16	91,8884	
17	57,2972		17	74,7410		17	92,1790	
18	57,5880		18	75,0316		18	92,4694	
19	57,8788		19	75,3224		19	92,7600	
20	58,1694		20	75,6130		20	93,0506	
21	58,4602		21	75,9038		21	93,3412	
22	58,7510		22	76,1942		22	93,6318	
23	59,0418		23	76,4850		23	93,9224	
24	59,3324		24	76,7756		24	94,2130	
25	59,6232		25	77,0662		25	94,5036	
26	59,9140		26	77,3570		26	94,7940	
27	60,2048		27	77,6476		27	95,0846	
28	60,4956		28	77,9384		28	95,3752	
29	60,7864		29	78,2290		29	95,6658	
30	61,0770		30	78,5196		30	95,9562	
31	61,3678	48,46	31	78,8102	48,44	31	96,2468	48,42
32	61,6586		32	79,1010		32	96,5374	
33	61,9494		33	79,3916		33	96,8280	
34	62,2400		34	79,6822		34	97,1184	
35	62,5308		35	79,9728		35	97,4090	
36	62,8216		36	80,2636		36	97,6996	
37	63,1124		37	80,5542		37	97,9902	
38	63,4030		38	80,8448		38	98,2806	
39	63,6938		39	81,1354		39	98,5712	
40	63,9844		40	81,4262		40	98,8616	
41	64,2752		41	81,7168		41	99,1522	
42	64,5660		42	82,0074		42	99,4428	
43	64,8568		43	82,2980		43	99,7334	
44	65,1474		44	82,5888		44	100,0238	
45	65,4382		45	82,8794		45	100,3144	
46	65,7288		46	83,1700		46	100,6048	
47	66,0196		47	83,4606		47	100,8954	
48	66,3104		48	83,7514		48	101,1858	
49	66,6012		49	84,0420		49	101,4764	
50	66,8918		50	84,3326		50	101,7670	
51	67,1826		51	84,6232		51	102,0576	
52	67,4732		52	84,9138		52	102,3480	
53	67,7640		53	85,2044		53	102,6386	
54	68,0548		54	85,4950		54	102,9290	
55	68,3456		55	85,7856		55	103,2196	
56	68,6362		56	86,0764		56	103,5100	
57	68,9270		57	86,3670		57	103,8004	
58	69,2176		58	86,6576		58	104,0910	
59	69,5084		59	86,9482		59	104,3814	
60	69,7990		60	87,2388		60	104,6720	

6°			7°			8°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	104,6720	48,41	0	122,0970	48,39	0	139,5130	48,37
1	104,9624		1	122,3874		1	139,8026	
2	105,2528		2	122,6778		2	140,0934	
3	105,5432		3	122,9682		3	140,3836	
4	105,8338		4	123,2584		4	140,6736	
5	106,1242		5	123,5488		5	140,9638	
6	106,4148		6	123,8392		6	141,2540	
7	106,7052		7	124,1296		7	141,5442	
8	106,9958		8	124,4198		8	141,8342	
9	107,2862		9	124,7102		9	142,1244	
10	107,5766		10	125,0004		10	142,4146	
11	107,8670		11	125,2908		11	142,7048	
12	108,1576		12	125,5810		12	142,9948	
13	108,4480		13	125,8712		13	143,2850	
14	108,7386		14	126,1616		14	143,5752	
15	109,0290		15	126,4518		15	143,8654	
16	109,3194		16	126,7422		16	144,1554	
17	109,6098		17	127,0324		17	144,4456	
18	109,9004		18	127,3228		18	144,7356	
19	110,1908		19	127,6130		19	145,0258	
20	110,4812		20	127,9034		20	145,3160	
21	110,7716		21	128,1936		21	145,6062	
22	111,0622		22	128,4840		22	145,8962	
23	111,3526		23	128,7742		23	146,1864	
24	111,6430		24	129,0646		24	146,4764	
25	111,9334		25	129,3548		25	146,7666	
26	112,2238		26	129,6452		26	147,0566	
27	112,5142		27	129,9354		27	147,3468	
28	112,8048		28	130,2258		28	147,6368	
29	113,0952		29	130,5160		29	147,9270	
30	113,3856		30	130,8062		30	148,2170	
31	113,6760	48,40	31	131,0964	48,38	31	148,5072	48,36
32	113,9664		32	131,3868		32	148,7972	
33	114,2568		33	131,6770		33	149,0874	
34	114,5472		34	131,9672		34	149,3774	
35	114,8376		35	132,2574		35	149,6674	
36	115,1280		36	132,5478		36	149,9574	
37	115,4184		37	132,8380		37	150,2474	
38	115,7088		38	133,1282		38	150,5376	
39	115,9992		39	133,4184		39	150,8276	
40	116,2896		40	133,7088		40	151,1178	
41	116,5800		41	133,9990		41	151,4078	
42	116,8704		42	134,2892		42	151,6978	
43	117,1608		43	134,5794		43	151,9878	
44	117,4512		44	134,8698		44	152,2780	
45	117,7416		45	135,1600		45	152,5680	
46	118,0320		46	135,4502		46	152,8580	48,35
47	118,3226		47	135,7404		47	153,1480	
48	118,6128		48	136,0306		48	153,4380	
49	118,9034		49	136,3208		49	153,7280	
50	119,1934		50	136,6110		50	154,0182	
51	119,4838		51	136,9012		51	154,3082	
52	119,7742		52	137,1914		52	154,5982	
53	120,0646		53	137,4816		53	154,8884	
54	120,3550		54	137,7718		54	155,1782	
55	120,6454		55	138,0620		55	155,4682	
56	120,9356		56	138,3522		56	155,7582	
57	121,2260		57	138,6424		57	156,0482	
58	121,5164		58	138,9326		58	156,3382	
59	121,8068		59	139,2228		59	156,6282	
60	122,0970		60	139,5130		60	156,9182	

9°			10°			11°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	156,9182	48,34	0	174,3114	48,30	0	191,6916	48,26
1	157,2082		1	174,6012		1	191,9812	
2	157,4982		2	174,8910		2	192,2706	
3	157,7882		3	175,1808		3	192,5602	
4	158,0782		4	175,4706		4	192,8496	
5	158,3682		5	175,7604		5	193,1392	
6	158,6580		6	176,0502		6	193,4288	
7	158,9480		7	176,3400		7	193,7184	
8	159,2380		8	176,6296		8	194,0078	
9	159,5280		9	176,9194		9	194,2974	
10	159,8180		10	177,2092		10	194,5868	
11	160,1080		11	177,4990		11	194,8764	
12	160,3978		12	177,7886		12	195,1658	
13	160,6878		13	178,0784		13	195,4554	
14	160,9778		14	178,3680		14	195,7448	
15	161,2678		15	178,6578		15	196,0344	
16	161,5576	48,33	16	178,9476	48,29	16	196,3238	48,25
17	161,8476		17	179,2374		17	196,6134	
18	162,1374		18	179,5270		18	196,9028	
19	162,4274		19	179,8168		19	197,1922	
20	162,7174		20	180,1064		20	197,4816	
21	163,0074		21	180,3960		21	197,7710	
22	163,2972		22	180,6858		22	198,0606	
23	163,5872		23	180,9754		23	198,3500	
24	163,8770		24	181,2652		24	198,6394	
25	164,1670		25	181,5548		25	198,9288	
26	164,4568		26	181,8446		26	199,2184	
27	164,7468		27	182,1342		27	199,5078	
28	165,0366		28	182,4238		28	199,7972	
29	165,3264		29	182,7134		29	200,0866	
30	165,6164	48,32	30	183,0032	48,28	30	200,3762	48,24
31	165,9062		31	183,2928		31	200,6656	
32	166,1962		32	183,5826		32	200,9550	
33	166,4860		33	183,8722		33	201,2444	
34	166,7760		34	184,1618		34	201,5338	
35	167,0658		35	184,4514		35	201,8232	
36	167,3556		36	184,7412		36	202,1126	
37	167,6454		37	185,0308		37	202,4020	
38	167,9354		38	185,3204		38	202,6914	
39	168,2252		39	185,6100		39	202,9808	
40	168,5152		40	185,8998		40	203,2702	
41	168,8050		41	186,1894		41	203,5596	
42	169,0948		42	186,4790		42	203,8490	
43	169,3846		43	186,7686		43	204,1384	
44	169,6746		44	187,0592		44	204,4276	
45	169,9644	48,31	45	187,3478	48,27	45	204,7170	48,23
46	170,2542		46	187,6374		46	205,0064	
47	170,5440		47	187,9270		47	205,2958	
48	170,8338		48	188,2166		48	205,5850	
49	171,1236		49	188,5062		49	205,8744	
50	171,4134		50	188,7958		50	206,1638	
51	171,7032		51	189,0854		51	206,4532	
52	171,9932		52	189,3750		52	206,7424	
53	172,2830		53	189,6646		53	207,0318	
54	172,5728		54	189,9542		54	207,3210	
55	172,8626		55	190,2438		55	207,6104	
56	173,1524		56	190,5332		56	207,8998	
57	173,4422		57	190,8228		57	208,1892	
58	173,7320		58	191,1124		58	208,4784	
59	174,0218		59	191,4020		59	208,7678	
60	174,3114		60	191,6916		60	209,0570	

12°			13°			14°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	209,0570	48,22	0	226,4064	48,18	0	243,7386	48,13
1	209,3464		1	226,6954		1	244,0274	
2	209,6356		2	226,9844		2	244,3162	
3	209,9248		3	227,2734		3	244,6050	
4	210,2140		4	227,5624		4	244,8936	
5	210,5034		5	227,8514		5	245,1824	
6	210,7926		6	228,1404		6	245,4710	
7	211,0820		7	228,4294		7	245,7596	
8	211,3712		8	228,7184		8	246,0482	
9	211,6604		9	229,0074		9	246,3370	
10	211,9496		10	229,2964		10	246,6256	
11	212,2390		11	229,5854		11	246,9144	
12	212,5282		12	229,8744		12	247,2030	
13	212,8174		13	230,1634		13	247,4916	
14	213,1066		14	230,4522		14	247,7802	
15	213,3958	48,21	15	230,7412	48,17	15	248,0690	48,10
16	213,6850		16	231,0302		16	248,3576	
17	213,9744		17	231,3192		17	248,6462	
18	214,2636		18	231,6080		18	248,9348	
19	214,5528		19	231,8970		19	249,2234	
20	214,8474		20	232,1858		20	249,5120	
21	215,1312		21	232,4748		21	249,8006	
22	215,4204		22	232,7636		22	250,0892	
23	215,7096		23	233,0526		23	250,3778	
24	215,9988		24	233,3414		24	250,6664	
25	216,2878		25	233,6304		25	250,9550	
26	216,5770		26	233,9192		26	251,2436	
27	216,8662		27	234,2082		27	251,5322	
28	217,1554		28	234,4970		28	251,8208	
29	217,4446		29	234,7860		29	252,1094	
30	217,7338	48,20	30	235,0748	48,16	30	252,3980	
31	218,0228		31	235,3638		31	252,6864	
32	218,3120		32	235,6526		32	252,9750	
33	218,6012		33	235,9414		33	253,2636	
34	218,8904		34	236,2302		34	253,5522	
35	219,1794		35	236,5192		35	253,8406	
36	219,4686		36	236,8080		36	254,1292	
37	219,7576		37	237,0968		37	254,4176	
38	220,0468		38	237,3858		38	254,7062	
39	220,3360		39	237,6746		39	254,9946	
40	220,6252		40	237,9632		40	255,2832	
41	220,9142		41	238,2520		41	255,5716	48,07
42	221,2034		42	238,5408		42	255,8604	
43	221,4924		43	238,8298		43	256,1488	
44	221,7816		44	239,1186		44	256,4372	
45	222,0706	48,19	45	239,4074	48,15	45	256,7256	
46	222,3598		46	239,6952		46	257,0142	
47	222,6488		47	239,9850		47	257,3026	
48	222,9378		48	240,2736		48	257,5912	
49	223,2268		49	240,5624		49	257,8796	
50	223,5160		50	240,8512		50	258,1682	
51	223,8050		51	241,1400		51	258,4566	
52	224,0942		52	241,4288		52	258,7450	
53	224,3832		53	241,7176		53	259,0334	
54	224,6722		54	242,0062		54	259,3218	
55	224,9612		55	242,2950		55	259,6102	
56	225,2504		56	242,5838		56	259,8988	
57	225,5394		57	242,8726		57	260,1872	
58	225,8284		58	243,1612		58	260,4756	
59	226,1174		59	243,4500		59	260,7640	
60	226,4064		60	243,7386		60	261,0524	

15°			16°			17°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	261,0524	48,07	0	278,3462	48,00	0	295,6188	47,97
1	261,3408		1	278,6344		1	295,9066	
2	261,6292		2	278,9224		2	296,1942	
3	261,9176		3	279,2104		3	296,4820	
4	262,2060		4	279,4984		4	296,7696	
5	262,4944		5	279,7864		5	297,0572	
6	262,7826		6	280,0744		6	297,3448	
7	263,0710		7	280,3624		7	297,6326	
8	263,3594		8	280,6504		8	297,9202	47,93
9	263,6478		9	280,9384		9	298,2078	
10	263,9362		10	281,2264		10	298,4954	
11	264,2246		11	281,5144		11	298,7830	
12	264,5128		12	281,8024		12	299,0706	
13	264,8012		13	282,0904		13	299,3584	
14	265,0894		14	282,3784		14	299,6460	
15	265,3778		15	282,6664		15	299,9336	
16	265,6660	48,03	16	282,9544	47,98	16	300,2212	
17	265,9544		17	283,2422		17	300,5088	
18	266,2426		18	283,5302		18	300,7962	
19	266,5310		19	283,8182		19	301,0838	
20	266,8192		20	284,1062		20	301,3714	
21	267,1076		21	284,3940		21	301,6590	
22	267,3958		22	284,6820		22	301,9466	
23	267,6842		23	284,9698		23	302,2342	
24	267,9724		24	285,2578		24	302,5216	
25	268,2606		25	285,5456		25	302,8092	
26	268,5488		26	285,8336		26	303,0968	
27	268,8372		27	286,1214		27	303,3844	
28	269,1254		28	286,4094		28	303,6718	
29	269,4136		29	286,6972		29	303,9594	
30	269,7018		30	286,9852		30	304,2468	
31	269,9902		31	287,2730		31	304,5344	
32	270,2784		32	287,5610		32	304,8218	
33	270,5666		33	287,8488		33	305,1094	
34	270,8548		34	288,1368		34	305,3968	47,90
35	271,1430		35	288,4246	47,97	35	305,6842	
36	271,4312		36	288,7124		36	305,9716	
37	271,7194		37	289,0002		37	306,2592	
38	272,0076		38	289,2880		38	306,5466	
39	272,2958		39	289,5758		39	306,8340	
40	272,5838		40	289,8638		40	307,1214	
41	272,8720		41	290,1516		41	307,4090	
42	273,1602		42	290,4394		42	307,6964	
43	273,4484		43	290,7272		43	307,9838	
44	273,7366		44	191,0150		44	308,2712	
45	274,0248		45	191,3028		45	308,5586	
46	274,3128		46	291,5906		46	308,8460	
47	274,6010		47	291,8784		47	309,1334	
48	274,8890		48	292,1660		48	309,4208	
49	275,1772		49	292,4538		49	309,7082	
50	275,4654		50	292,7416		50	309,9956	
51	275,7536		51	293,0294		51	310,2828	
52	276,0416		52	293,3170		52	310,5702	
53	276,3298		53	293,6048		53	310,8576	
54	276,6178		54	293,8926		54	311,1450	
55	276,9060		55	294,1804		55	311,4322	
56	277,1940		56	294,4680		56	311,7196	
57	277,4820		57	294,7558		57	312,0070	
58	277,7700		58	295,0434		58	312,2944	
59	278,0580		59	295,3312		59	312,5816	
60	278,3462		60	295,6188		60	312,8690	

18°			19°			20°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	312,8690	47,87	0	330,0952	47,80	0	347,2964	47,73
1	313,1562		1	330,3822		1	347,5828	
2	313,4436		2	330,6690		2	347,8692	
3	313,7308		3	330,9560		3	348,1558	
4	314,0182		4	331,2428		4	348,4422	
5	314,3054		5	331,5296		5	348,7286	
6	314,5926		6	331,8164		6	349,0150	
7	314,8798		7	332,1034		7	349,3014	
8	315,1672		8	332,3902		8	349,5878	
9	315,4544		9	332,6770		9	349,8742	
10	315,7416		10	332,9638		10	350,1606	
11	316,0288		11	333,2506		11	350,4470	
12	316,3162		12	333,5374		12	350,7334	
13	316,6034		13	333,8242		13	351,0198	
14	316,8906		14	334,1112		14	351,3062	
15	317,1778		15	334,3981		15	351,5926	
16	317,4650		16	334,6846		16	351,8790	
17	317,7522		17	334,9714		17	352,1654	
18	318,0394		18	335,2582		18	352,4516	
19	318,3266		19	335,5450		19	352,7380	
20	318,6138		20	335,8318		20	353,0242	
21	318,9010		21	336,1186		21	353,3106	
22	319,1880		22	336,4052		22	353,5968	
23	319,4752		23	336,6918		23	353,8832	
24	319,7634		24	336,9788		24	354,1694	
25	320,0496		25	337,2654		25	354,4558	
26	320,3366		26	337,5522		26	354,7420	
27	320,6238		27	337,8388		27	355,0284	
28	320,9110		28	338,1256		28	355,3146	
29	321,1982		29	338,4122		29	355,6008	
30	321,4852	47,83	30	338,6990	47,77	30	355,8870	47,70
31	321,7724		31	338,9856		31	356,1734	
32	322,0594		32	339,2724		32	356,4596	
33	322,3464		33	339,5590		33	356,7458	
34	322,6334		34	339,8456		34	357,0320	
35	322,9206		35	340,1322		35	357,3182	
36	323,2076		36	340,4190		36	357,6044	
37	323,4948		37	340,7056		37	357,8906	
38	323,7818		38	340,9922		38	358,1768	
39	324,0688		39	341,2788		39	358,4630	
40	324,3558		40	341,5656		40	358,7492	
41	324,6430		41	341,8522		41	359,0352	
42	324,9300		42	342,1388		42	359,3214	
43	325,2170		43	342,4254		43	359,6076	
44	325,5040		44	342,7120		44	359,8938	
45	325,7910		45	342,9986		45	360,1798	
46	326,0780		46	343,2850		46	360,4660	
47	326,3650		47	343,5716		47	360,7520	
48	326,6520		48	343,8582		48	361,0382	
49	326,9390		49	344,1448		49	361,3242	
50	327,2258		50	344,4312		50	361,6104	
51	327,5128		51	344,7178		51	361,8964	
52	327,7998		52	345,0044		52	362,1826	
53	328,0868		53	345,2910		53	362,4686	
54	328,3736		54	345,5774		54	362,7548	
55	328,6606		55	345,8640		55	363,0408	
56	328,9476		56	346,1504		56	363,3270	
57	329,2346		57	346,4370		57	363,6130	
58	329,5214		58	346,7234		58	363,8990	
59	329,8084		59	347,0100		59	364,1850	
60	330,0952		60	347,2964		60	364,4710	

21°			22°			23°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	364,4710	47,67	0	381,6180	47,57	0	398,7358	47,50
1	364,7570		1	381,9034		1	399,0210	
2	365,0430		2	382,1890		2	399,3060	
3	365,3290		3	382,4744		3	399,5910	
4	365,6150		4	382,7602		4	399,8760	
5	365,9010		5	383,0456		5	400,1610	
6	366,1870		6	383,3312		6	400,4460	
7	366,4730		7	383,6166		7	400,7310	
8	366,7590		8	383,9020		8	401,0160	
9	367,0450		9	384,1874		9	401,3010	
10	367,3308		10	384,4730		10	401,5860	
11	367,6168		11	384,7584		11	401,8708	
12	367,9028		12	385,0440		12	402,1558	
13	368,1888		13	385,3294		13	402,4408	
14	368,4746		14	385,6148		14	402,7258	
15	368,7606		15	385,9002		15	403,0106	
16	369,0464	47,63	16	386,1856		16	403,2956	
17	369,3324		17	386,4710		17	403,5804	
18	369,6182		18	386,7564		18	403,8654	
19	369,9040		19	387,0418		19	404,1502	
20	370,1898		20	387,3272		20	404,4352	47,47
21	370,4758		21	387,6126		21	404,7200	
22	370,7616		22	387,8980		22	405,0048	
23	371,0474		23	388,1834		23	405,2896	
24	371,3332		24	388,4688		24	405,5746	
25	371,6190		25	388,7542		25	405,8594	
26	371,9048		26	389,0394		26	406,1442	
27	372,1906		27	389,3248		27	406,4290	
28	372,4764		28	389,6100		28	406,7138	
29	372,7622		29	389,8954		29	406,9986	
30	373,0480		30	390,1806		30	407,2836	
31	373,3338		31	390,4660		31	407,5684	
32	373,6196		32	390,7512		32	407,8530	
33	373,9054		33	391,0366		33	408,1378	
34	374,1912		34	391,3218	47,53	34	408,4226	
35	374,4770		35	391,6070		35	408,7074	
36	374,7626		36	391,8922		36	408,9922	
37	375,0484		37	392,1774		37	409,2770	
38	375,3340		38	392,4628		38	409,5616	
39	375,6198		39	392,7480		39	409,8464	
40	375,9056		40	393,0332		40	410,1310	
41	376,1914		41	393,3184		41	410,4158	
42	376,4770		42	393,6036		42	410,7004	
43	376,7628		43	393,8888		43	410,9852	
44	377,0482		44	394,1740		44	411,2698	47,43
45	377,3340	47,60	45	394,4592		45	411,5544	
46	377,6196		46	394,7444		46	411,8390	
47	377,9052		47	395,0296		47	412,1238	
48	378,1908		48	395,3146		48	412,4084	
49	378,4766		49	395,5998		49	412,6930	
50	378,7622		50	395,8850		50	412,9776	
51	379,0478		51	396,1702		51	413,2622	
52	379,3334		52	396,4552		52	413,5468	
53	379,6190		53	396,7404		53	413,8314	
54	379,9046		54	397,0254		54	414,1160	
55	380,1902		55	397,3106		55	414,4006	
56	380,4758		56	397,5956		56	414,6852	
57	380,7612		57	397,8808		57	414,9698	
58	381,0468		58	398,1658		58	415,2544	
59	381,3324		59	398,4510		59	415,5390	
60	381,6180		60	398,7358		60	415,8234	

24 °			25 °			26 °		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	415,8234	47,43	0	432,8792	47,33	0	449,9022	47,23
1	416,1080		1	433,1632		1	450,1856	
2	416,3924		2	433,4472		2	450,4690	
3	416,6770		3	433,7312		3	450,7524	
4	416,9614		4	434,0152		4	451,0358	
5	417,2460		5	434,2992		5	451,3192	
6	417,5304		6	434,5830		6	451,6026	
7	417,8150		7	434,8670	47,30	7	451,8860	
8	418,0994	47,40	8	435,1508		8	452,1692	
9	418,3838		9	435,4348		9	452,4526	
10	418,6682		10	435,7186		10	452,7360	
11	418,9528		11	436,0026		11	453,0194	
12	419,2372		12	436,2864		12	453,3026	
13	419,5216		13	436,5704		13	453,5860	
14	419,8060		14	436,8542		14	453,8692	
15	420,0904		15	437,1382		15	454,1526	
16	420,3748		16	437,4220		16	454,4358	47,20
17	420,6592		17	437,7058		17	454,7192	
18	420,9436		18	437,9896		18	455,0024	
19	421,2278		19	438,2734		19	455,2856	
20	421,5122		20	438,5572		20	455,5688	
21	421,7966		21	438,8410		21	455,8522	
22	422,0810		22	439,1248		22	456,1354	
23	422,3652		23	439,4086		23	456,4186	
24	422,6496		24	439,6924		24	456,7018	
25	422,9338	47,37	25	439,9762		25	456,9850	
26	423,2182		26	440,2600		26	457,2682	
27	423,5024		27	440,5436		27	457,5510	
28	423,7868		28	440,8274		28	457,8344	
29	424,0710		29	441,1110		29	458,1176	
30	424,3554		30	441,3948		30	458,4008	
31	424,6396		31	441,6784		31	458,6838	
32	424,9238		32	441,9622	47,27	32	458,9670	
33	425,2080		33	442,2458		33	459,2500	
34	425,4924		34	442,5296		34	459,5332	
35	425,7766		35	442,8132		35	459,8162	47,13
36	426,0608		36	443,0970		36	460,0994	
37	426,3450		37	443,3806		37	460,3824	
38	426,6292		38	443,6642		38	460,6656	
39	426,9134		39	443,9478		39	460,9486	
40	427,1976		40	444,2316		40	461,2318	
41	427,4818		41	444,5152		41	461,5148	
42	427,7658		42	444,7988		42	461,7978	
43	428,0500		43	445,0824		43	462,0808	
44	428,3342		44	445,3660		44	462,3638	
45	428,6184		45	445,6496		45	462,6468	
46	428,9024		46	445,9332		46	462,9298	
47	429,1866	47,33	47	446,2168		47	463,2128	
48	429,4706		48	446,5002		48	463,4958	
49	429,7548		49	446,7838		49	463,7788	
50	430,0388		50	447,0674		50	464,0618	
51	430,3230		51	447,3510		51	464,3448	
52	430,6070		52	447,6344		52	464,6276	
53	430,8912		53	447,9180		53	464,9106	
54	431,1752		54	448,2014		54	465,1934	
55	431,4592		55	448,4848		55	465,4764	
56	431,7432		56	448,7684		56	465,7592	
57	432,0276		57	449,0520		57	466,0422	
58	432,3112		58	449,3352		58	466,3250	
59	432,5956		59	449,6188		59	466,6080	
60	432,8792		60	449,9022		60	466,8908	

27°			28°			29°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	466,8908	47,13	0	483,8438	47,03	0	500,7600	46,93
1	467,1736		1	484,1260		1	501,0416	
2	467,4564		2	484,4082		2	501,3232	
3	467,7392		3	484,6904		3	501,6048	
4	468,0220		4	484,9726		4	501,8864	
5	468,3048		5	485,2548		5	502,1680	
6	468,5876		6	485,5370		6	502,4496	
7	468,8704		7	485,8192		7	502,7312	
8	469,1532		8	486,1014		8	503,0126	
9	469,4360		9	486,3836		9	503,2942	
10	469,7188		10	486,6658		10	503,5758	
11	470,0016		11	486,9480		11	503,8574	
12	470,2842		12	487,2300		12	504,1388	
13	470,5670		13	487,5122		13	504,4202	
14	470,8496		14	487,7942		14	504,7016	
15	471,1324		15	488,0764		15	504,9832	
16	471,4150		16	488,3584		16	505,2646	
17	471,6978		17	488,6406		17	505,5460	
18	471,9804		18	488,9226		18	505,8274	
19	472,2632		19	489,2048		19	506,1090	
20	472,5458	47,10	20	489,4866		20	506,3904	
21	472,8284		21	489,7688	47,00	21	506,6718	46,90
22	473,1110		22	490,0508		22	506,9532	
23	473,3936		23	490,3328		23	507,2344	
24	473,6762		24	490,6148		24	507,5158	
25	473,9588		25	490,8968		25	507,7972	
26	474,2414		26	491,1788		26	508,0786	
27	474,5240		27	491,4606		27	508,3598	
28	474,8066		28	491,7426		28	508,6412	
29	475,0892		29	492,0246		29	508,9224	
30	475,3718		30	492,3066		30	509,2038	
31	475,6542		31	492,5884		31	509,4850	
32	475,9368		32	492,8704		32	509,7664	
33	476,2194		33	493,1522		33	510,0476	
34	476,5020		34	493,4342		34	510,3290	
35	476,7844		35	493,7160		35	510,6102	
36	477,0670	47,07	36	493,9980	46,97	36	510,8916	46,87
37	477,3494		37	494,2798		37	511,1728	
38	477,6318		38	494,5618		38	511,4540	
39	477,9142		39	494,8436		39	511,7352	
40	478,1968		40	495,1254		40	512,0164	
41	478,4792		41	495,4072		41	512,2976	
42	478,7616		42	495,6890		42	512,5788	
43	479,0440		43	495,9708		43	512,8600	
44	479,3266		44	496,2526		44	513,1415	
45	479,6090		45	496,5344		45	513,4222	
46	479,8914		46	496,8162		46	513,7034	
47	480,1738		47	497,0980		47	513,9846	
48	480,4560		48	497,3798		48	514,2656	
49	480,7384		49	497,6616		49	514,5468	
50	481,0208		50	497,9432		50	514,8278	
51	481,3032		51	498,2250		51	515,1090	
52	481,5854		52	498,5066		52	515,3900	46,83
53	481,8678		53	498,7884		53	515,6710	
54	482,1502		54	499,0700		54	515,9520	
55	482,4326		55	499,3518		55	516,2330	
56	482,7148	47,03	56	499,6334	46,93	56	516,5140	
57	482,9970		57	499,9152		57	516,7952	
58	483,2792		58	500,1968		58	517,0762	
59	483,5616		59	500,4784		59	517,3572	
60	483,8438		60	500,7600		60	517,6380	

30°			31°			32°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	517,6380	46,83	0	534,4768	46,70	0	551,2748	46,60
1	517,9190		1	534,7572		1	551,5544	
2	518,2000		2	535,0374		2	551,8340	
3	518,4810		3	535,3176		3	552,1134	
4	518,7620		4	535,5978		4	552,3930	
5	519,0430		5	535,8782		5	552,6726	
6	519,3238		6	536,1584		6	552,9522	
7	519,6048		7	536,4386		7	553,2316	
8	519,8856		8	536,7188		8	553,5112	
9	520,1666		9	536,9990		9	553,7908	
10	520,4474	46,80	10	537,2792		10	554,0704	46,57
11	520,7282		11	537,5594		11	554,3498	
12	521,0090		12	537,8396		12	554,6294	
13	521,2898		13	538,1198		13	554,9088	
14	521,5706		14	538,4000		14	555,1882	
15	521,8514		15	538,6800	46,67	15	555,4676	
16	522,1324		16	538,9602		16	555,7472	
17	522,4132		17	539,2402		17	556,0266	
18	522,6938		18	539,5204		18	556,3060	
19	522,9746		19	539,8004		19	556,5854	
20	523,2554		20	540,0806		20	556,8648	
21	523,5362		21	540,3606		21	557,1442	
22	523,8170		22	540,6408		22	557,4236	
23	524,0976	46,77	23	540,9208		23	557,7030	
24	524,3784		24	541,2008		24	557,9822	
25	524,6590		25	541,4808		25	558,2616	46,53
26	524,9398		26	541,7610		26	558,5408	
27	525,2204		27	542,0410		27	558,8202	
28	525,5012		28	542,3210		28	559,0994	
29	525,7818		29	542,6010		29	559,3788	
30	526,0624		30	542,8808		30	559,6580	
31	526,3430		31	543,1608		31	559,9374	
32	526,6236		32	543,4408		32	560,2166	
33	526,9042		33	543,7208		33	560,4958	
34	527,1850		34	544,0006		34	560,7750	
35	527,4656		35	544,2806		35	561,0542	
36	527,7460		36	544,5604		36	561,3334	
37	528,0266		37	544,8404	46,63	37	561,6126	
38	528,3072		38	545,1202		38	561,8918	
39	528,5878		39	545,4002		39	562,1710	
40	528,8684		40	545,6800		40	562,4502	46,50
41	529,1490		41	545,9598		41	562,7294	
42	529,4294		42	546,2396		42	563,0084	
43	529,7100		43	546,5194		43	563,2876	
44	529,9904	46,73	44	546,7992		44	563,5666	
45	530,2710		45	547,0790		45	563,8458	
46	530,5514		46	547,3588		46	564,1248	
47	530,8318		47	547,6386		47	564,4040	
48	531,1122		48	547,9184		48	564,6830	
49	531,3926		49	548,1982		49	564,9620	
50	531,6732		50	548,4780		50	565,2410	
51	531,9536		51	548,7578		51	565,5200	
52	532,2340		52	549,0374		52	565,7990	
53	532,5144		53	549,3172		53	566,0780	
54	532,7946		54	549,5968	46,60	54	566,3570	
55	533,0750		55	549,8766		55	566,6360	
56	533,3554		56	550,1562		56	566,9150	46,46
57	533,6358		57	550,4360		57	567,1938	
58	533,9162		58	550,7154		58	567,4728	
59	534,1966		59	550,9950		59	567,7516	
60	534,4768		60	551,2748		60	568,0306	

33°			34°			35°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	568,0306	46,46	0	584,7434	46,37	0	601,4116	46,23
1	568,3094		1	585,0216		1	601,6890	
2	568,5884		2	585,2998		2	601,9664	
3	568,8672		3	585,5780		3	602,2438	
4	569,1462		4	585,8560		4	602,5212	
5	569,4250		5	586,1342		5	602,7986	
6	569,7040		6	586,4122	46,33	6	603,0760	46,20
7	569,9828		7	586,6904		7	603,3534	
8	570,2616		8	586,9684		8	603,6306	
9	570,5404		9	587,2466		9	603,9080	
10	570,8192		10	587,5246		10	604,1852	
11	571,0980		11	587,8026		11	604,4626	
12	571,3768	46,43	12	588,0806		12	604,7398	
13	571,6556		13	588,3586		13	605,0170	
14	571,9342		14	588,6366		14	605,2942	
15	572,2130		15	588,9146		15	605,5716	
16	572,4916		16	589,1926		16	605,8488	
17	572,7704		17	589,4706		17	606,1260	
18	573,0492		18	589,7486		18	606,4032	
19	573,3280		19	590,0266		19	606,6804	
20	573,6064		20	590,3044		20	606,9576	
21	573,8852		21	590,5824		21	607,2346	
22	574,1638		22	590,8604		22	607,5118	
23	574,4424		23	591,1384		23	607,7890	
24	574,7210		24	591,4162	46,30	24	608,0662	46,17
25	574,9996		25	591,6942		25	608,3432	
26	575,2782		26	591,9718		26	608,6204	
27	575,5568		27	592,2498		27	608,8974	
28	575,8354		28	592,5276		28	609,1744	
29	576,1140		29	592,8054		29	609,4514	
30	576,3926	46,40	30	593,0832		30	609,7286	
31	576,6712		31	593,3610		31	610,0056	
32	576,9496		32	593,6388		32	610,2826	
33	577,2282		33	593,9164		33	610,5596	
34	577,5066		34	594,1942		34	610,8366	
35	577,7852		35	594,4720	46,27	35	611,1136	
36	578,0636		36	594,7498		36	611,3906	
37	578,3422		37	595,0274		37	611,6676	
38	578,6206		38	595,3052		38	611,9446	
39	578,8990		39	595,5828		39	612,2216	
40	579,1774		40	595,8606		40	612,4984	46,13
41	579,4558		41	596,1382		41	612,7754	
42	579,7342		42	596,4158		42	613,0522	
43	580,0126		43	596,6934		43	613,3290	
44	580,2910		44	596,9712		44	613,6060	
45	580,5694	46,37	45	597,2488		45	613,8830	
46	580,8478		46	597,5264		46	614,1596	
47	581,1260		47	597,8040		47	614,4364	
48	581,4044		48	598,0816		48	614,7132	
49	581,6826		49	598,3592		49	614,9900	
50	581,9610		50	598,6368	46,23	50	615,2668	
51	582,2392		51	598,9144		51	615,5436	
52	582,5176		52	599,1918		52	615,8204	
53	582,7958		53	599,4694		53	616,0972	46,10
54	583,0742		54	599,7468		54	616,3738	
55	583,3524		55	600,0244		55	616,6506	
56	583,6306		56	600,3018		56	616,9272	
57	583,9088		57	600,5794		57	617,2040	
58	584,1870		58	600,8568		58	617,4806	
59	584,4652		59	601,1342		59	617,7574	
60	584,7434		60	601,4116		60	618,0340	

36°			37°			38°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	618,0340	46,10	0	634,6094	45,96	0	651,1364	45,83
1	618,3106		1	634,8852		1	651,4114	
2	618,5872		2	635,1610		2	651,6864	
3	618,8638		3	635,4368		3	651,9614	
4	619,1404		4	635,7126		4	652,2364	
5	619,4170		5	635,9884		5	652,5114	
6	619,6936		6	636,2642		6	652,7864	
7	619,9702		7	636,5400		7	653,0614	
8	620,2468		8	636,8158		8	653,3362	
9	620,5232		9	637,0916		9	653,6112	
10	620,7998		10	637,3672		10	653,8860	
11	621,0762		11	637,6430		11	654,1610	
12	621,3528		12	637,9186		12	654,4358	
13	621,6292		13	638,1944		13	654,7108	
14	621,9058		14	638,4700		14	654,9856	
15	622,1822		15	638,7456		15	655,2604	
16	622,4588	46,06	16	639,0212	45,93	16	655,5352	45,80
17	622,7352		17	639,2970		17	655,8100	
18	623,0116		18	639,5726		18	656,0848	
19	623,2880		19	639,8482		19	656,3596	
20	623,5644		20	640,1238		20	656,6344	
21	623,8408		21	640,3994		21	656,9090	
22	624,1172		22	640,6748		22	657,1838	
23	624,3936		23	640,9504		23	657,4584	
24	624,6698		24	641,2260		24	657,7332	
25	624,9462		25	641,5016		25	658,0078	
26	625,2224		26	641,7770		26	658,2836	
27	625,4988		27	642,0526		27	658,5572	
28	625,7750		28	642,3280		28	658,8320	
29	626,0514		29	642,6036		29	659,1066	
30	626,3276		30	642,8790		30	659,3812	
31	626,6038	46,03	31	643,1544	45,90	31	659,6558	45,76
32	626,8800		32	643,4298		32	659,9306	
33	627,1564		33	643,7052		33	660,2052	
34	627,4326		34	643,9806		34	660,4796	
35	627,7088		35	644,2560		35	660,7542	
36	627,9850		36	644,5314		36	661,0288	
37	628,2612		37	644,8068		37	661,3034	
38	628,5372		38	645,0822		38	661,5778	
39	628,8134		39	645,3576		39	661,8524	
40	629,0896		40	645,6328		40	662,1268	
41	629,3658	46,00	41	645,9080	45,86	41	662,4014	45,73
42	629,6418		42	646,1834		42	662,6758	
43	629,9178		43	646,4586		43	662,9502	
44	630,1938		44	646,7340		44	663,2246	
45	630,4700		45	647,0092		45	663,4990	
46	630,7460		46	647,2844		46	663,7734	
47	631,0220		47	647,5596		47	664,0478	
48	631,2980		48	647,8348		48	664,3222	
49	631,5740		49	648,1100		49	664,5966	
50	631,8500		50	648,3852		50	664,8710	
51	632,1260		51	648,6604		51	665,1454	
52	632,4020		52	648,9356		52	665,4196	
53	632,6780		53	649,2108		53	665,6940	
54	632,9540		54	649,4858		54	665,9682	
55	633,2298		55	649,7610		55	666,2426	
56	633,5058	45,96	56	650,0360	45,83	56	666,5168	45,70
57	633,7816		57	650,3112		57	666,7912	
58	634,0576		58	650,5862		58	667,0652	
59	634,3334		59	650,8614		59	667,3394	
60	634,6094		60	651,1364		60	667,6138	

39°			40°			41°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	667,6138	45,70	0	684,0402	45,56	0	700,4148	45,40
1	667,8878		1	684,3136		1	700,6874	
2	668,1620		2	684,5870		2	700,9596	
3	668,4360		3	684,8604		3	701,2320	
4	668,7104		4	685,1336		4	701,5046	
5	668,9844		5	685,4070		5	701,7770	
6	669,2586		6	685,6800		6	702,0492	
7	669,5326		7	685,9532		7	702,2214	
8	669,8068		8	686,2266		8	702,5940	
9	670,0808		9	686,4998		9	702,8662	
10	670,3550	45,66	10	686,7730	45,53	10	703,1386	
11	670,6290		11	687,0462		11	703,4108	
12	670,9032		12	687,3194		12	703,6832	
13	671,1772		13	687,5926		13	703,9554	
14	671,4512		14	687,8658		14	704,2278	
15	671,7252		15	688,1390		15	704,5000	45,36
16	671,9992		16	688,4120		16	704,7724	
17	672,2732		17	688,6852		17	705,0446	
18	672,5470		18	688,9582		18	705,3168	
19	672,8210		19	689,2314		19	705,5890	
20	673,0950		20	689,5042	45,50	20	705,8612	
21	673,3690		21	689,7772		21	706,1334	
22	673,6428		22	690,0504		22	706,4054	
23	673,9168		23	690,3234		23	706,6776	
24	674,1906		24	690,5964		24	706,9496	
25	774,4644	45,63	25	690,8694		25	707,2218	
26	674,7382		26	691,1424		26	707,4938	
27	675,0120		27	691,4154		27	707,7660	
28	675,2858		28	691,6882		28	708,0380	
29	675,5596		29	691,9610		29	708,3100	
30	675,8334		30	692,2342		30	708,5820	45,33
31	676,1072		31	692,5070		31	708,8540	
32	676,3810		32	692,7800		32	709,1260	
33	676,6548		33	693,0528		33	709,3980	
34	676,9288		34	693,3256		34	709,6700	
35	677,2022		35	693,5984	45,46	35	709,9420	
36	677,4758		36	693,8714		36	710,2140	
37	677,7496		37	694,1442		37	710,4860	
38	678,0232		38	694,4170		38	710,7578	
39	678,2970		39	694,6898		39	711,0298	
40	678,5704	45,60	40	694,9624		40	711,3016	45,30
41	678,8440		41	695,2352		41	711,5734	
42	679,1178		42	695,5080		42	711,8452	
43	679,3914		43	695,7808		43	712,1170	
44	679,6650		44	696,0534		44	712,3888	
45	679,9384		45	696,3262		45	712,6606	
46	680,2120		46	696,5988		46	712,9324	
47	680,4854		47	696,8716		47	713,2042	
48	680,7592		48	697,1440		48	713,4760	
49	681,0326		49	697,4166		49	713,7476	
50	681,3062		50	697,6894	45,43	50	714,0194	
51	681,5796		51	697,9620		51	714,2910	
52	681,8530		52	698,2346		52	714,5628	
53	682,1264		53	698,5072		53	714,8344	
54	682,4000		54	698,7796		54	715,1062	
55	682,6734	45,56	55	699,0522		55	715,3778	45,26
56	682,9468		56	699,3248		56	715,6496	
57	683,2202		57	699,5974		57	715,9212	
58	683,4936		58	699,8698		58	716,1928	
59	683,7670		59	700,1424		59	716,4644	
60	684,0402		60	700,4148		60	716,7358	

42°			43°			44°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	716,7358	45,26	0	733,0024	45,10	0	749,2132	44,93
1	717,0074		1	733,2730		1	749,4830	
2	717,2790		2	733,5438		2	749,7526	
3	717,5506		3	733,8144		3	750,0222	
4	717,8220		4	734,0850		4	750,2918	
5	718,0936		5	734,3556		5	750,5614	
6	718,3650		6	734,6260		6	750,8312	
7	718,6366		7	734,8964		7	751,1008	
8	718,9080		8	735,1672		8	751,3704	
9	719,1794		9	735,4376		9	751,6400	
10	719,4508	45,23	10	735,7082	45,06	10	751,9094	44,90
11	719,7222		11	735,9786		11	752,1790	
12	719,9936		12	736,2492		12	752,4486	
13	720,2650		13	736,5196		13	752,7182	
14	720,5364		14	736,7900		14	752,9876	
15	720,8078		15	737,0604		15	753,2570	
16	721,0790		16	737,3308		16	753,5264	
17	721,3504		17	737,6012		17	753,7960	
18	721,6216		18	737,8716		18	754,0654	
19	721,8930		19	738,1420		19	754,3348	
20	722,1642	45,20	20	738,4122	45,03	20	754,6042	
21	722,4354		21	738,6826		21	754,8734	
22	722,7068		22	738,9530		22	755,1428	
23	722,9780		23	739,2234		23	755,4120	
24	723,2492		24	739,4936		24	755,6816	
25	723,5204		25	739,7638		25	755,9508	44,86
26	723,7916		26	740,0340		26	756,2202	
27	724,0626		27	740,3042		27	756,4894	
28	724,3338		28	740,5744		28	756,7588	
29	724,6048		29	740,8446		29	757,0280	
30	724,8760		30	741,1148		30	757,2972	
31	725,1470		31	741,3850		31	757,5664	
32	725,4182		32	741,6552		32	757,8356	
33	725,6892		33	741,9254		33	758,1048	
34	725,9604		34	742,1954		34	758,3740	
35	726,2314	45,16	35	742,4656	45,00	35	758,6432	
36	726,5024		36	742,7356		36	758,9124	
37	726,7734		37	743,0058		37	759,1816	
38	727,0444		38	743,2758		38	759,4506	
39	727,3154		39	743,5460		39	759,7198	
40	727,5864		40	743,8158		40	759,9888	44,83
41	727,8574		41	744,0858		41	760,2578	
42	728,1282		42	744,3560		42	760,5268	
43	728,3992		43	744,6260		43	760,7958	
44	728,6702		44	744,8958		44	761,0648	
45	728,9412	45,13	45	745,1656		45	761,3338	
46	729,2118		46	745,4358		46	761,6028	
47	729,4828		47	745,7056		47	761,8718	
48	729,7536		48	745,9756		48	662,1408	
49	730,0244		49	746,2454		49	762,4098	
50	730,2952		50	746,5154	44,96	50	762,6786	44,80
51	730,5660		51	746,7852		51	762,9476	
52	730,8368		52	747,0550		52	763,2164	
53	731,1076		53	747,3248		53	663,4852	
54	731,3782		54	747,5946		54	763,7540	
55	731,6490		55	747,8644		55	764,0230	
56	731,9198		56	748,1342		56	764,2918	
57	732,1906		57	748,4040		57	764,5606	
58	732,4612		58	748,6738		58	764,8294	
59	732,7320		59	748,9436		59	765,0980	
60	733,0024		60	749,2132		60	765,3668	

45°			46°			47°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	765,3668	44,76	0	781,4622	44,63	0	797,4982	44,43
1	765,6356		1	781,7300		1	797,7650	
2	765,9044		2	781,9978		2	798,0313	
3	766,1730		3	782,2656		3	798,2984	
4	766,4418		4	782,5332		4	798,5650	
5	766,7104		5	782,8010	44,60	5	798,8318	
6	766,9790		6	783,0686		6	799,0984	
7	767,2476		7	783,3362		7	799,3650	
8	767,5164		8	783,6038		8	799,6316	
9	767,7850		9	783,8714		9	799,8982	
10	768,0536		10	784,1390		10	800,1650	
11	768,3222		11	784,4066		11	800,4316	
12	768,5906		12	784,6742		12	800,6980	
13	768,8592		13	784,9418		13	800,9646	
14	769,1278		14	785,2094		14	801,2312	
15	769,3964	44,73	15	785,4768		15	801,4978	44,40
16	769,6648		16	785,7444		16	801,7642	
17	769,9332		17	786,0118		17	802,0308	
18	770,2016		18	786,2794		18	802,2972	
19	770,4702		19	686,5468		19	802,5636	
20	770,7386		20	786,8142	44,56	20	802,8300	
21	771,0070		21	787,0816		21	803,0964	
22	771,2754		22	787,3490		22	803,3628	
23	771,5438		23	787,6164		23	803,6292	
24	771,8120		24	787,8838		24	803,8956	
25	772,0804		25	788,1512		25	804,1618	
26	772,3488		26	788,4186		26	804,4282	
27	772,6172		27	788,6860		27	804,6944	
28	772,8854		28	788,9532		28	804,9608	
29	773,1538		29	789,2206		29	805,2270	
30	773,4220	44,70	30	789,4878	44,53	30	805,4934	44,36
31	773,6902		31	789,7550		31	805,7596	
32	773,9584		32	790,0222		32	806,0258	
33	774,2266		33	790,2894		33	806,2922	
34	774,4948		34	790,5566		34	806,5582	
35	774,7630		35	790,8238		35	806,8246	
36	775,0312		36	791,0910		36	807,0906	
37	775,2992		37	791,3582		37	807,3570	
38	775,5674		38	791,6254		38	807,6228	
39	775,8354		39	791,8926		39	807,8892	
40	776,1036		40	792,1596	44,50	40	808,1550	44,33
41	776,3716		41	792,4266		41	808,4214	
42	776,6398		42	792,6936		42	808,6872	
43	776,9078		43	792,9608		43	808,9532	
44	777,1760		44	793,2278		44	809,2192	
45	777,4440	44,66	45	793,4948		45	809,4852	
46	777,7120		46	793,7618		46	809,7512	
47	777,9800		47	794,0288		47	810,0172	
48	778,2480		48	794,2958		48	810,2832	
49	778,5160		49	794,5626		49	810,5492	
50	778,7838		50	794,8296	44,46	50	810,8150	
51	779,0518		51	795,0964		51	811,0810	
52	779,3196		52	795,3636		52	811,3468	
53	779,5876		53	795,6304		53	811,6128	
54	779,8554		54	795,8972		54	811,8786	
55	780,1232	44,63	55	796,1640		55	812,1444	44,30
56	780,3910		56	796,4310		56	812,4102	
57	780,6588		57	796,6978		57	812,6760	
58	780,9266		58	796,9646		58	812,9418	
59	781,1944		59	797,2314		59	813,2074	
60	781,4622		60	797,4982		60	813,4732	

48°			49°			50°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	813,4732	44,30	0	829,3864	44,10	0	845,2366	43,93
1	813,7390		1	829,6512		1	845,5002	
2	814,0048		2	829,9158		2	845,7638	
3	814,2704		3	830,1806		3	846,0274	
4	814,5362		4	830,4452		4	846,2910	
5	814,8018		5	830,7098		5	846,5546	
6	815,0674		6	830,9744		6	846,8180	
7	815,3330		7	831,2388		7	847,0816	
8	815,5986		8	831,5034		8	847,3450	
9	815,8642		9	831,7680		9	847,6086	
10	816,1298		10	832,0326		10	847,8720	
11	816,3954		11	832,2970		11	848,1354	
12	816,6610		12	832,5616		12	848,3988	
13	816,9266		13	832,8260		13	848,6622	
14	817,1920		14	833,0906		14	848,9256	
15	817,4576	44,25	15	833,3550	44,05	15	849,1890	43,89
16	817,7230		16	833,6194		16	849,4524	
17	817,9884		17	833,8838		17	849,7156	
18	818,2538		18	834,1482		18	849,9790	
19	818,5192		19	834,4126		19	850,2422	
20	818,7846		20	834,6770		20	850,5056	
21	819,0500		21	834,9414		21	850,7688	
22	819,3154		22	835,2056		22	851,0322	
23	819,5808		23	835,4700		23	851,2954	
24	819,8460		24	835,7342		24	851,5586	
25	820,1114		25	835,9984		25	851,8218	
26	820,3766		26	836,2626		26	852,0850	
27	820,6420		27	836,5270		27	852,3482	
28	820,9072		28	836,7912		28	852,6112	
29	821,1726		29	837,0554		29	852,8744	
30	821,4378	44,20	30	837,3194	44,00	30	853,1374	43,85
31	821,7030		31	837,5836		31	853,4006	
32	821,9682		32	837,8478		32	853,6636	
33	822,2332		33	838,1120		33	853,9268	
34	822,4984		34	838,3760		34	854,1898	
35	822,7636		35	838,6402		35	854,4528	
36	823,0288		36	838,9042		36	854,7158	
37	823,2938		37	839,1682		37	854,9788	
38	823,5590		38	839,4322		38	855,2416	
39	823,8240		39	839,6962		39	855,5046	
40	824,0890		40	839,9602		40	855,7676	
41	824,3540		41	840,2242		41	856,0306	
42	824,6192		42	840,4882		42	856,2934	
43	824,8842		43	840,7520		43	856,5562	
44	825,1490		44	841,0162		44	856,8190	
45	825,4140	44,15	45	841,2798	43,95	45	857,0818	43,81
46	825,6790		46	841,5438		46	857,3446	
47	825,9440		47	841,8076		47	857,6074	
48	826,2088		48	842,0716		48	857,8702	
49	826,4738		49	842,3354		49	858,1330	
50	826,7386		50	842,5992		50	858,3958	
51	827,0036		51	842,8630		51	858,6584	
52	827,2684		52	843,1262		52	858,9212	
53	827,5332		53	843,3900		53	859,1838	
54	827,7980		54	843,6544		54	859,4466	
55	828,0628		55	843,9182		55	859,7092	
56	828,3276		56	844,1818		56	859,9718	
57	828,5924		57	844,4456		57	860,2344	
58	828,8570		58	844,7092		58	860,4970	
59	829,1218		59	844,9730		59	860,7596	
60	829,3864		60	845,2366		60	861,0222	

51°			52°			53°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	861,0222	43,76	0	876,7422	43,56	0	892,3956	43,40
1	861,2848		1	877,0036		1	892,6558	
2	861,5472		2	877,2652		2	892,9162	
3	861,8098		3	877,5266		3	893,1764	
4	862,0722		4	877,7880		4	893,4368	
5	862,3348		5	878,0494		5	893,6970	
6	862,5972		6	878,3106		6	893,9572	
7	862,8596		7	878,5720		7	894,2174	
8	863,1220		8	878,8332		8	894,4776	
9	863,3844		9	879,0946		9	894,7378	
10	863,6468		10	879,3558		10	894,9980	
11	863,9092		11	879,6172		11	895,2582	
12	864,1714		12	879,8784		12	895,5182	
13	864,4338		13	880,1396		13	895,7784	
14	864,6962		14	880,4008		14	896,0384	
15	864,9584	43,71	15	880,6620	43,52	15	896,2984	43,35
16	865,2206		16	880,9230		16	896,5584	
17	865,4830		17	881,1842		17	896,8184	
18	865,7452		18	881,4454		18	897,0784	
19	866,0074		19	881,7066		19	897,3384	
20	866,2696		20	881,9676		20	897,5984	
21	866,5318		21	882,2286		21	897,8584	
22	866,7940		22	882,4896		22	898,1182	
23	867,0560		23	882,7508		23	898,3782	
24	867,3182		24	883,0118		24	898,6380	
25	867,5802		25	883,2726		25	898,8980	
26	867,8424		26	883,5336		26	899,1578	
27	868,1044		27	883,7946		27	899,4176	
28	868,3664		28	884,0556		28	899,6774	
29	868,6284		29	884,3164		29	899,9370	
30	868,8906	43,66	30	884,5774	43,48	30	900,1968	43,30
31	869,1526		31	884,8382		31	900,4566	
32	869,4144		32	885,0992		32	900,7164	
33	869,6764		33	885,3600		33	900,9760	
34	869,9384		34	885,6208		34	901,2358	
35	870,2004		35	885,8816		35	901,4954	
36	870,4622		36	886,1424		36	901,7550	
37	870,7242		37	886,4032		37	902,0146	
38	870,9860		38	886,6638		38	902,2744	
39	871,2478		39	886,9246		39	902,5340	
40	871,5096		40	887,1854		40	902,7934	
41	871,7714		41	887,4462		41	903,0530	
42	872,0332		42	887,7068		42	903,3126	
43	872,2950		43	887,9674		43	903,5722	
44	872,5568		44	888,2280		44	903,8316	
45	872,8186	43,61	45	888,4886	43,44	45	904,0912	43,25
46	873,0802		46	888,7492		46	904,3506	
47	873,3420		47	889,0098		47	904,6100	
48	873,6036		48	889,2704		48	904,8694	
49	873,8652		49	889,5312		49	905,1288	
50	874,1268		50	889,7914		50	905,3882	
51	874,3886		51	890,0520		51	905,6476	
52	874,6502		52	890,3124		52	905,9070	
53	874,9118		53	890,5730		53	906,1664	
54	875,1732		54	890,8334		54	906,4256	
55	875,4348		55	891,0938		55	906,6850	
56	875,6964		56	891,3542		56	906,9442	
57	875,9578		57	891,6146		57	907,2034	
58	876,2194		58	891,8750		58	907,4626	
59	876,4808		59	892,1352		59	907,7218	
60	876,7422		60	892,3956		60	907,9810	

54°			55°			56°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	907,9810	43,20	0	923,4972	42,96	0	938,9432	42,80
1	908,2402		1	923,7552		1	939,2000	
2	908,4994		2	924,0132		2	939,4568	
3	908,7584		3	924,2712		3	939,7136	
4	909,0176		4	924,5292		4	939,9704	
5	909,2766		5	924,7870		5	940,2270	
6	909,5358		6	925,0450		6	940,4838	
7	909,7948		7	925,3028		7	940,7404	
8	910,0538		8	925,5608		8	940,9972	
9	910,3128		9	925,8186		9	941,2538	
10	910,5718		10	926,0764		10	941,5106	
11	910,8308		11	926,3342		11	941,7672	
12	911,0898		12	926,5920		12	942,0238	
13	911,3488		13	926,8498		13	942,2804	
14	911,6076		14	927,1076		14	942,5370	
15	911,8666	43,14	15	927,3654	42,92	15	942,7936	42,75
16	912,1254		16	927,6230		16	943,0500	
17	912,3844		17	927,8808		17	943,3066	
18	912,6432		18	928,1384		18	943,5630	
19	912,9020		19	928,3962		19	943,8196	
20	913,1608		20	928,6538		20	944,0760	
21	913,4196		21	928,9114		21	944,3324	
22	913,6784		22	929,1690		22	944,5888	
23	913,9372		23	929,4266		23	944,8452	
24	914,1958		24	929,6840		24	945,1016	
25	914,4546		25	929,9416		25	945,3580	
26	914,7132		26	930,1992		26	945,6142	
27	914,9720		27	930,4568		27	945,8706	
28	915,2306		28	930,7142		28	946,1268	
29	915,4892		29	930,9716		29	946,3832	
30	915,7478	43,08	30	931,2290	42,88	30	946,6394	42,70
31	916,0064		31	931,4864		31	946,8956	
32	916,2650		32	931,7438		32	947,1518	
33	916,5234		33	932,0012		33	947,4080	
34	916,7820		34	932,2586		34	947,6642	
35	917,0404		35	932,5158		35	947,9204	
36	917,2992		36	932,7732		36	948,1764	
37	917,5576		37	933,0304		37	948,4324	
38	917,8160		38	933,2878		38	948,6886	
39	918,0744		39	933,5450		39	948,9446	
40	918,3330		40	933,8024		40	949,2008	
41	918,5914		41	934,2596		41	949,4568	
42	918,8496		42	934,3168		42	949,7128	
43	919,1080		43	934,5740		43	949,9688	
44	919,3664		44	934,8312		44	950,2248	
45	919,6248	43,02	45	935,0884	42,84	45	950,4808	42,65
46	919,8830		46	935,3454		46	950,7366	
47	920,1414		47	935,6026		47	950,9926	
48	920,3996		48	935,8596		48	951,2484	
49	920,6578		49	936,1168		49	951,5044	
50	920,9160		50	936,3738		50	951,7602	
51	921,1742		51	936,6308		51	952,0160	
52	921,4324		52	936,8878		52	952,2718	
53	921,6906		53	937,1448		53	952,5276	
54	921,9488		54	937,4018		54	952,7834	
55	922,2070		55	937,6588		55	953,0392	
56	922,4650		56	937,9156		56	953,2948	
57	922,7232		57	938,1726		57	953,5506	
58	922,9812		58	938,4294		58	953,8062	
59	923,2394		59	938,6864		59	954,0620	
60	923,4972		60	938,9432		60	954,3176	

57°			58°			59°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	954,3176	42,60	0	969,6192	42,40	0	984,8472	42,20
1	954,5732		1	969,8736		1	985,1002	
2	954,8288		2	970,1280		2	985,3534	
3	955,0844		3	970,3824		3	985,6064	
4	955,3400		4	970,6368		4	985,8596	
5	955,5954		5	970,8910		5	986,1126	
6	955,8510		6	971,1454		6	986,3658	
7	956,1064		7	971,3996		7	986,6188	
8	956,3620		8	971,6540		8	986,8718	
9	956,6174		9	971,9082		9	987,1248	
10	956,8728		10	972,1624		10	987,3778	
11	957,1282		11	972,4166		11	987,6308	
12	957,3838		12	972,6708		12	987,8838	
13	957,6392		13	972,9250		13	988,1368	
14	957,8944		14	973,1790		14	988,3896	
15	958,1498		15	973,4332		15	988,6426	
16	958,4052	42,55	16	973,6872	42,35	16	988,8952	42,15
17	958,6606		17	973,9414		17	989,1480	
18	958,9158		18	974,1954		18	989,4010	
19	959,1710		19	974,4494		19	989,6538	
20	959,4262		20	974,7034		20	989,9064	
21	959,6814		21	974,9574		21	990,1592	
22	959,9366		22	795,2114		22	990,4120	
23	960,1918		23	795,4654		23	990,6648	
24	960,4470		24	795,7194		24	990,9174	
25	960,7022		25	795,9734		25	991,1700	
26	960,9572		26	976,2272		26	991,4226	
27	961,2124		27	976,4810		27	991,6752	
28	961,4674		28	976,7348		28	991,9278	
29	961,7226		29	976,9886		29	992,1804	
30	961,9776		30	977,2424		30	992,4330	
31	962,2328	42,50	31	977,4962	42,30	31	992,6854	42,10
32	962,4876		32	977,7500		32	992,9380	
33	962,7426		33	978,0036		33	993,1904	
34	962,9974		34	978,2576		34	993,4430	
35	963,2522		35	978,5112		35	993,6954	
36	963,5074		36	978,7650		36	993,9480	
37	963,7622		37	979,0186		37	994,2004	
38	964,0172		38	979,2722		38	994,4528	
39	964,2720		39	979,5258		39	994,7052	
40	964,5268		40	979,7794		40	994,9574	
41	964,7816		41	980,0330		41	995,2098	
42	965,0364		42	980,2866		42	995,4620	
43	965,2912		43	980,5402		43	995,7144	
44	965,5460		44	980,7936		44	995,9666	
45	965,8008		45	981,0472		45	996,2188	
46	966,0554	42,45	46	981,3006	42,25	46	996,4710	42,05
47	966,3102		47	981,5540		47	996,7232	
48	966,5648		48	981,8076		48	996,9754	
49	966,8194		49	982,0610		49	997,2276	
50	967,0740		50	982,3144		50	997,4798	
51	967,3286		51	982,5678		51	997,7320	
52	967,5832		52	982,8210		52	997,9840	
53	967,8378		53	983,0744		53	998,2362	
54	968,0924		54	983,3276		54	998,4882	
55	968,3470		55	983,5810		55	998,7402	
56	968,6014		56	983,8342		56	998,9922	
57	968,8560		57	984,0876		57	999,2442	
58	969,1104		58	984,3408		58	999,4962	
59	969,3648		59	984,5940		59	999,7480	
60	969,6192		60	984,8472		60	1000,000	

60°			61°			62°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	1000,000	4,20	0	1015,077	4,18	0	1030,076	4,15
1	1000,252		1	1015,328		1	1030,326	
2	1000,504		2	1015,578		2	1030,575	
3	1000,756		3	1015,829		3	1030,824	
4	1001,007		4	1016,079		4	1031,073	
5	1001,259		5	1016,330		5	1031,323	
6	1001,511		6	1016,580		6	1031,572	
7	1001,763		7	1016,831		7	1031,821	
8	1002,015		8	1017,081		8	1032,070	
9	1002,265		9	1017,332		9	1032,319	
10	1002,518		10	1017,582		10	1032,568	
11	1002,770		11	1017,832		11	1032,818	
12	1003,021		12	1018,083		12	1033,067	
13	1003,273		13	1018,333		13	1033,316	
14	1003,525		14	1018,584		14	1033,565	
15	1003,776		15	1018,834		15	1033,814	
16	1004,028		16	1019,084		16	1034,063	
17	1004,280		17	1019,335		17	1034,312	
18	1004,531		18	1019,585		18	1034,561	
19	1004,783		19	1019,835		19	1034,810	
20	1005,034		20	1020,085	4,17	20	1035,059	
21	1005,286		21	1020,335		21	1035,307	
22	1005,537		22	1020,586		22	1035,556	
23	1005,788		23	1020,836		23	1035,805	
24	1006,040		24	1021,086		24	1036,054	
25	1006,291		25	1021,336		25	1036,303	
26	1006,543		26	1021,586		26	1036,552	
27	1006,794		27	1021,836		27	1036,800	
28	1007,045		28	1022,086		28	1037,049	
29	1007,297		29	1022,336		29	1037,298	
30	1007,548	4,19	30	1022,586		30	1037,547	4,14
31	1007,799		31	1022,835		31	1037,795	
32	1008,050		32	1023,086		32	1038,044	
33	1008,302		33	1023,336		33	1038,292	
34	1008,553		34	1023,586		34	1038,541	
35	1008,804		35	1023,836		35	1038,790	
36	1009,055		36	1024,086		36	1039,038	
37	1009,306		37	1024,336		37	1039,287	
38	1009,558		38	1024,585		38	1039,535	
39	1009,809		39	1024,835		39	1039,784	
40	1010,060		40	1025,085	4,16	40	1040,032	
41	1010,311		41	1025,335		41	1040,281	
42	1010,562		42	1025,585		42	1040,529	
43	1010,813		43	1025,834		43	1040,778	
44	1011,064		44	1026,084		44	1041,026	
45	1011,315		45	1026,334		45	1041,274	
46	1011,566		46	1026,583		46	1041,523	
47	1011,817		47	1026,833		47	1041,771	
48	1012,068		48	1027,083		48	1042,019	
49	1012,319		49	1027,332		49	1042,267	
50	1012,569		50	1027,582		50	1042,516	
51	1012,820		51	1027,831		51	1042,764	
52	1013,071		52	1028,081		52	1043,012	
53	1013,322		53	1028,330		53	1043,260	
54	1013,573		54	1028,580		54	1043,509	
55	1013,823		55	1028,829		55	1043,757	
56	1014,074		56	1029,079		56	1044,005	
57	1014,325		57	1029,328		57	1044,253	
58	1014,575		58	1029,577		58	1044,501	
59	1014,826		59	1029,827		59	1044,749	
60	1015,077		60	1030,076		60	1044,997	

63°			64°			65°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	1044,997	4,13	0	1059,839	4,11	0	1074,599	4,08
1	1045,245		1	1060,086		1	1074,844	
2	1045,493		2	1060,332		2	1075,090	
3	1045,741		3	1060,578		3	1075,335	
4	1045,989		4	1060,825		4	1075,580	
5	1046,237		5	1061,072		5	1075,826	
6	1046,485		6	1061,318		6	1076,071	
7	1046,733		7	1061,565		7	1076,316	
8	1046,981		8	1061,811		8	1076,561	
9	1047,228		9	1062,058		9	1076,806	
10	1047,476		10	1062,304		10	1077,051	
11	1047,724		11	1062,551		11	1077,297	
12	1047,972		12	1062,797		12	1077,542	
13	1048,219		13	1063,044		13	1077,787	
14	1048,467		14	1063,290		14	1078,032	
15	1048,715		15	1063,536		15	1078,277	
16	1048,963		16	1063,783		16	1078,522	
17	1049,210		17	1064,029		17	1078,767	
18	1049,458		18	1064,275		18	1079,012	
19	1049,706		19	1064,522		19	1079,257	
20	1049,953		20	1064,768		20	1079,501	
21	1050,201		21	1065,014	4,10	21	1079,746	
22	1050,448		22	1065,260		22	1079,991	
23	1050,696		23	1065,506		23	1080,236	
24	1050,943		24	1065,753		24	1080,481	
25	1051,191		25	1065,999		25	1080,725	
26	1051,438		26	1066,245		26	1080,970	
27	1051,686		27	1066,491		27	1081,215	
28	1051,933		28	1066,737		28	1081,460	
29	1052,180		29	1066,983		29	1081,704	
30	1052,428		30	1067,229		30	1081,949	4,07
31	1052,675	4,12	31	1067,475		31	1082,194	
32	1052,923		32	1067,721		32	1082,438	
33	1053,170		33	1067,967		33	1082,683	
34	1053,417		34	1068,213		34	1082,927	
35	1053,664		35	1068,459		35	1083,172	
36	1053,912		36	1068,705		36	1083,416	
37	1054,159		37	1068,950		37	1083,661	
38	1054,406		38	1069,196		38	1083,905	
39	1054,653		39	1069,442		39	1084,150	
40	1054,900		40	1069,688	4,09	40	1084,394	
41	1055,147		41	1069,934		41	1084,639	
42	1055,395		42	1070,180		42	1084,883	
43	1055,642		43	1070,425		43	1085,127	
44	1055,889		44	1070,671		44	1085,372	
45	1056,136		45	1070,917		45	1085,616	
46	1056,383		46	1071,162		46	1085,860	
47	1056,630		47	1071,408		47	1086,105	
48	1056,877		48	1071,654		48	1086,349	
49	1057,124		49	1071,899		49	1086,593	
50	1057,371		50	1072,145		50	1086,837	
51	1057,618		51	1072,390		51	1087,082	
52	1057,864		52	1072,636		52	1087,326	
53	1058,111		53	1072,881		53	1087,569	
54	1058,358		54	1073,127		54	1087,814	
55	1058,605		55	1073,372		55	1088,058	
56	1058,852		56	1073,618		56	1088,302	
57	1059,098		57	1073,863		57	1088,546	
58	1059,345		58	1074,109		58	1088,790	
59	1059,592		59	1074,354		59	1089,034	
60	1059,839		60	1074,599		60	1089,278	

66°			67°			68°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	1089,278	4,06	0	1103,874	4,04	0	1118,386	4,02
1	1089,522		1	1104,117		1	1118,627	
2	1089,766		2	1104,358		2	1118,868	
3	1090,010		3	1104,602		3	1119,109	
4	1090,254		4	1104,844		4	1119,350	
5	1090,498		5	1105,087		5	1119,591	
6	1090,741		6	1105,329		6	1119,832	
7	1090,985		7	1105,571		7	1120,073	
8	1091,229		8	1105,814		8	1120,314	
9	1091,473		9	1106,056		9	1120,555	
10	1091,717		10	1106,298		10	1120,796	
11	1091,960		11	1106,541		11	1121,037	
12	1092,204		12	1106,783		12	1121,278	
13	1092,448		13	1107,025		13	1121,519	
14	1092,691		14	1107,268		14	1121,760	
15	1092,935		15	1107,510		15	1122,000	
16	1093,178		16	1107,752		16	1122,241	
17	1093,422		17	1107,994		17	1122,482	
18	1093,666		18	1108,236		18	1122,723	
19	1093,909		19	1108,479		19	1122,964	
20	1094,153		20	1108,721		20	1123,204	
21	1094,396		21	1108,963		21	1123,445	
22	1094,640		22	1109,205		22	1123,686	
23	1094,883		23	1109,447		23	1123,926	
24	1095,126		24	1109,689		24	1124,167	
25	1095,372		25	1109,931		25	1124,407	
26	1095,613		26	1110,173		26	1124,648	
27	1095,857		27	1110,415		27	1124,888	
28	1096,100		28	1110,657		28	1125,129	
29	1096,343		29	1110,899		29	1125,369	
30	1096,586		30	1111,140		30	1125,610	
31	1096,830	4,05	31	1111,382	4,03	31	1125,850	
32	1097,073		32	1111,624		32	1126,091	
33	1097,316		33	1111,866		33	1126,331	
34	1097,559		34	1112,108		34	1126,571	
35	1097,803		35	1112,349		35	1126,812	
36	1098,046		36	1112,591		36	1127,052	
37	1098,289		37	1112,833		37	1127,292	
38	1098,532		38	1113,075		38	1127,533	
39	1098,775		39	1113,316		39	1127,773	
40	1099,018		40	1113,558		40	1128,013	
41	1099,261		41	1113,800		41	1128,253	4,00
42	1099,504		42	1114,041		42	1128,493	
43	1099,747		43	1114,283		43	1128,734	
44	1099,990		44	1114,524		44	1128,974	
45	1100,233		45	1114,766		45	1129,214	
46	1100,476		46	1115,007		46	1129,454	
47	1100,719		47	1115,249		47	1129,694	
48	1100,961		48	1115,490		48	1129,934	
49	1101,204		49	1115,732		49	1130,174	
50	1101,447		50	1115,973		50	1130,414	
51	1101,690		51	1116,214		51	1130,654	
52	1101,933		52	1116,456		52	1130,894	
53	1102,175		53	1116,697		53	1131,134	
54	1102,418		54	1116,938		54	1131,374	
55	1102,661		55	1117,180		55	1131,613	
56	1102,904		56	1117,421		56	1131,853	
57	1103,146		57	1117,662		57	1132,093	
58	1103,389		58	1117,903		58	1132,333	
59	1103,631		59	1118,145		59	1132,573	
60	1103,874		60	1118,386		60	1132,812	

69°			70°			71°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	1132,812	3,99	0	1147,153	3,96	0	1161,406	3,94
1	1133,052	1	1	1147,391	1	1	1161,643	1
2	1133,292	2	2	1147,629	2	2	1161,879	2
3	1133,531	3	3	1147,868	3	3	1162,116	3
4	1133,771	4	4	1148,106	4	4	1162,353	4
5	1134,011	5	5	1148,344	5	5	1162,590	5
6	1134,250	6	6	1148,582	6	6	1162,826	6
7	1134,490	7	7	1148,820	7	7	1163,063	7
8	1134,730	8	8	1149,058	8	8	1163,300	8
9	1134,969	9	9	1149,296	9	9	1163,536	9
10	1135,209	01	10	1149,534	01	10	1163,773	01
11	1135,448	11	11	1149,772	11	11	1164,009	11
12	1135,687	21	12	1150,011	21	12	1164,246	21
13	1135,927	31	13	1150,249	31	13	1164,483	31
14	1136,166	41	14	1150,486	41	14	1164,719	41
15	1136,406	51	15	1150,724	51	15	1164,955	51
16	1136,645	61	16	1150,962	61	16	1165,192	61
17	1136,884	71	17	1151,200	71	17	1165,428	71
18	1137,124	81	18	1151,438	81	18	1165,665	81
19	1137,363	91	19	1151,676	91	19	1165,901	91
20	1137,602	02	20	1151,914	02	20	1166,137	02
21	1137,841	12	21	1152,151	12	21	1166,374	12
22	1138,081	22	22	1152,389	22	22	1166,610	22
23	1138,320	32	23	1152,627	32	23	1166,846	32
24	1138,559	42	24	1152,865	42	24	1167,082	42
25	1138,798	52	25	1153,102	52	25	1167,319	52
26	1139,037	62	26	1153,340	62	26	1167,555	62
27	1139,277	72	27	1153,578	72	27	1167,791	72
28	1139,515	82	28	1153,815	82	28	1168,027	82
29	1139,755	92	29	1154,053	92	29	1168,263	92
30	1139,994	03	30	1154,290	03	30	1168,499	03
31	1140,233	13	31	1154,528	13	31	1168,735	13
32	1140,471	23	32	1154,765	23	32	1168,971	23
33	1140,710	33	33	1155,003	33	33	1169,207	33
34	1140,949	43	34	1155,240	43	34	1169,443	43
35	1141,188	53	35	1155,478	53	35	1169,679	53
36	1141,427	63	36	1155,715	63	36	1169,915	63
37	1141,666	73	37	1155,953	73	37	1170,151	73
38	1141,905	83	38	1156,190	83	38	1170,387	83
39	1142,144	93	39	1156,427	93	39	1170,623	93
40	1142,382	04	40	1156,665	04	40	1170,859	04
41	1142,621	14	41	1156,902	14	41	1171,095	14
42	1142,860	24	42	1157,139	24	42	1171,330	24
43	1143,098	34	43	1157,376	34	43	1171,566	34
44	1143,337	44	44	1157,614	44	44	1171,802	44
45	1143,576	54	45	1157,851	54	45	1172,038	54
46	1143,815	64	46	1158,088	64	46	1172,273	64
47	1144,053	74	47	1158,325	74	47	1172,509	74
48	1144,292	84	48	1158,562	84	48	1172,745	84
49	1144,530	94	49	1158,800	94	49	1172,980	94
50	1144,769	05	50	1159,037	05	50	1173,216	05
51	1145,007	15	51	1159,274	15	51	1173,452	15
52	1145,246	25	52	1159,511	25	52	1173,687	25
53	1145,484	35	53	1159,748	35	53	1173,923	35
54	1145,723	45	54	1159,985	45	54	1174,158	45
55	1145,961	55	55	1160,221	55	55	1174,394	55
56	1146,200	65	56	1160,458	65	56	1174,629	65
57	1146,438	75	57	1160,695	75	57	1174,864	75
58	1146,676	85	58	1160,932	85	58	1175,100	85
59	1146,914	95	59	1161,169	95	59	1175,335	95
60	1147,153	06	60	1161,406	06	60	1175,571	06

72°			73°			74°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	1175,571	3,92	0	1189,646	3,90	0	1203,630	3,88
1	1175,806		1	1189,879		1	1203,862	
2	1176,041		2	1190,113		2	1204,095	
3	1176,276		3	1190,347		3	1204,327	
4	1176,512		4	1190,581		4	1204,559	
5	1176,747		5	1190,815		5	1204,791	
6	1176,982		6	1191,048		6	1205,023	
7	1177,217		7	1191,282		7	1205,256	
8	1177,452		8	1191,515		8	1205,488	
9	1177,687		9	1191,749		9	1205,720	
10	1177,923		10	1191,983		10	1205,952	
11	1178,158		11	1192,216		11	1206,184	
12	1178,393		12	1192,450		12	1206,416	
13	1178,628		13	1192,683		13	1206,648	
14	1178,864		14	1192,917		14	1206,880	
15	1179,098		15	1193,150		15	1207,112	
16	1179,333		16	1193,384		16	1207,344	
17	1179,568		17	1193,617		17	1207,576	
18	1179,802		18	1193,850		18	1207,808	
19	1180,037		19	1194,084		19	1208,039	
20	1180,272		20	1194,317		20	1208,271	
21	1180,507		21	1194,550		21	1208,503	
22	1180,742		22	1194,784		22	1208,735	
23	1180,977		23	1195,017		23	1208,967	
24	1181,211		24	1195,250		24	1209,198	
25	1181,446		25	1195,483		25	1209,430	
26	1181,681		26	1195,717		26	1209,662	
27	1181,815		27	1195,950		27	1209,893	
28	1182,150		28	1196,183		28	1210,125	
29	1182,385		29	1196,416		29	1210,356	
30	1182,619		30	1196,649		30	1210,588	
31	1182,854	3,91	31	1196,882	3,89	31	1210,819	
32	1183,088		32	1197,115		32	1211,051	
33	1183,323		33	1197,348		33	1211,282	
34	1183,557		34	1197,581		34	1211,514	
35	1183,792		35	1197,814		35	1211,745	
36	1184,026		36	1198,047		36	1211,977	
37	1184,261		37	1198,280		37	1212,208	
38	1184,495		38	1198,513		38	1212,440	
39	1184,730		39	1198,746		39	1212,671	
40	1184,964		40	1198,979		40	1212,902	
41	1185,198		41	1199,211		41	1213,133	
42	1185,433		42	1199,444		42	1213,365	
43	1185,667		43	1199,677		43	1213,596	
44	1185,901		44	1199,910		44	1213,827	
45	1186,135		45	1200,142		45	1214,058	
46	1186,369		46	1200,375		46	1214,289	
47	1186,604		47	1200,608		47	1214,521	
48	1186,838		48	1200,840		48	1214,752	
49	1187,072		49	1201,073		49	1214,983	
50	1187,306		50	1201,306		50	1215,214	
51	1187,540		51	1201,538		51	1215,445	
52	1187,774		52	1201,771		52	1215,676	
53	1188,008		53	1202,003		53	1215,907	
54	1188,242		54	1202,236		54	1216,138	
55	1188,476		55	1202,468		55	1216,369	
56	1188,710		56	1202,701		56	1216,600	
57	1188,944		57	1202,933		57	1216,830	
58	1189,178		58	1203,165		58	1217,061	
59	1189,412		59	1203,398		59	1217,292	
60	1189,646		60	1203,630		60	1217,523	

75°			76°			77°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	1217,523	3,85	0	1231,323	3,82	0	1245,029	3,79
1	1217,754		1	1231,552		1	1245,257	
2	1217,984		2	1231,781		2	1245,485	
3	1218,215		3	1232,010		3	1245,712	
4	1218,446		4	1232,240		4	1245,940	
5	1218,676		5	1232,469		5	1246,167	
6	1218,907		6	1232,698		6	1246,395	
7	1219,138		7	1232,927		7	1246,622	
8	1219,368		8	1233,156		8	1246,850	
9	1219,599		9	1233,385		9	1247,077	
10	1219,829		10	1233,614		10	1247,304	
11	1220,060		11	1233,843		11	1247,532	
12	1220,290		12	1234,072		12	1247,759	
13	1220,521		13	1234,301		13	1247,986	
14	1220,751		14	1234,530		14	1248,214	
15	1220,982		15	1234,758		15	1248,441	
16	1221,212		16	1234,987		16	1248,668	
17	1221,442		17	1235,216		17	1248,896	
18	1221,673		18	1235,445		18	1249,123	
19	1221,903		19	1235,674		19	1249,350	
20	1222,133		20	1235,902		20	1249,577	
21	1222,363	3,81	21	1236,131	3,81	21	1249,804	
22	1222,594		22	1236,360		22	1250,031	
23	1222,824		23	1236,588		23	1250,258	
24	1223,054		24	1236,817		24	1250,485	
25	1223,284		25	1237,045		25	1250,712	
26	1223,514		26	1237,274		26	1250,939	
27	1223,745		27	1237,502		27	1251,166	
28	1223,975		28	1237,731		28	1251,393	
29	1224,205		29	1237,959		29	1251,620	
30	1224,435		30	1238,188		30	1251,847	3,78
31	1224,665		31	1238,416		31	1252,074	
32	1224,985		32	1238,645		32	1252,301	
33	1225,125		33	1238,873		33	1252,527	
34	1225,354		34	1239,101		34	1252,754	
35	1225,584		35	1239,330		35	1252,981	
36	1225,814		36	1239,558		36	1253,208	
37	1226,044		37	1239,786		37	1253,434	
38	1226,274		38	1240,015		38	1253,661	
39	1226,503		39	1240,243		39	1253,888	
40	1226,733		40	1240,471		40	1254,114	
41	1226,963	3,83	41	1240,699	3,80	41	1254,341	
42	1227,193		42	1240,927		42	1254,567	
43	1227,422		43	1241,155		43	1254,794	
44	1227,652		44	1241,383		44	1255,020	
45	1227,882		45	1241,612		45	1255,247	
46	1228,111		46	1241,840		46	1255,473	
47	1228,341		47	1242,068		47	1255,700	
48	1228,570		48	1242,296		48	1255,926	
49	1228,800		49	1242,523		49	1256,153	
50	1229,029		50	1242,751		50	1256,379	
51	1229,259		51	1242,979		51	1256,605	
52	1229,488		52	1243,207		52	1256,831	
53	1229,718		53	1243,435		53	1257,058	
54	1229,947		54	1243,663		54	1257,284	
55	1230,177		55	1243,891		55	1257,510	
56	1230,406		56	1244,118		56	1257,736	
57	1230,635		57	1244,346		57	1257,962	
58	1230,864		58	1244,574		58	1258,189	
59	1231,094		59	1244,802		59	1258,415	
60	1231,323		60	1245,029		60	1258,641	

78°			79°			80°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	1258,641	3,77	0	1272,156	3,74	0	1285,575	3,71
1	1258,867		1	1272,381		1	1285,798	
2	1259,093		2	1272,605		2	1286,021	
3	1259,319		3	1272,830		3	1286,244	
4	1259,545		4	1273,054		4	1286,466	
5	1259,771		5	1273,278		5	1286,689	
6	1259,997		6	1273,503		6	1286,912	
7	1260,223		7	1273,727		7	1287,134	
8	1260,448		8	1273,951		8	1287,357	
9	1260,674		9	1274,175		9	1287,580	
10	1260,900		10	1274,400		10	1287,802	
11	1261,126		11	1274,624		11	1288,025	
12	1261,352		12	1274,848		12	1288,247	
13	1261,577		13	1275,072		13	1288,470	
14	1261,803		14	1275,296		14	1288,692	
15	1262,029		15	1275,520		15	1288,915	
16	1262,254		16	1275,744		16	1289,137	
17	1262,480		17	1275,968		17	1289,359	
18	1262,706		18	1276,192		18	1289,582	
19	1262,931		19	1276,416		19	1289,804	
20	1263,157		20	1276,640		20	1290,026	
21	1263,382	3,76	21	1276,864	3,73	21	1290,249	3,70
22	1263,608		22	1277,088		22	1290,471	
23	1263,833		23	1277,312		23	1290,693	
24	1264,059		24	1277,536		24	1290,915	
25	1264,284		25	1277,759		25	1291,138	
26	1264,509		26	1277,983		26	1291,360	
27	1264,735		27	1278,207		27	1291,582	
28	1264,960		28	1278,431		28	1291,804	
29	1265,185		29	1278,654		29	1292,026	
30	1265,411		30	1278,878		30	1292,248	
31	1265,636		31	1279,102		31	1292,470	
32	1265,861		32	1279,325		32	1292,692	
33	1266,086		33	1279,549		33	1292,914	
34	1266,311		34	1279,772		34	1293,136	
35	1266,537		35	1279,996		35	1293,358	
36	1266,762		36	1280,219		36	1293,580	
37	1266,987		37	1280,443		37	1293,801	
38	1267,212		38	1280,666		38	1294,023	
39	1267,437		39	1280,890		39	1294,245	
40	1267,662		40	1281,113		40	1294,467	
41	1267,887	3,75	41	1281,337	3,72	41	1294,689	3,69
42	1268,112		42	1281,560		42	1294,910	
43	1268,337		43	1281,783		43	1295,132	
44	1268,562		44	1282,006		44	1295,353	
45	1268,786		45	1282,230		45	1295,575	
46	1269,011		46	1282,453		46	1295,797	
47	1269,236		47	1282,676		47	1296,018	
48	1269,461		48	1282,899		48	1296,240	
49	1269,686		49	1283,122		49	1296,461	
50	1269,911		50	1283,346		50	1296,683	
51	1270,135		51	1283,568		51	1296,904	
52	1270,360		52	1283,792		52	1297,126	
53	1270,585		53	1284,015		53	1297,347	
54	1270,809		54	1284,238		54	1297,568	
55	1271,034		55	1284,461		55	1297,790	
56	1271,258		56	1284,684		56	1298,011	
57	1271,482		57	1284,907		57	1298,232	
58	1271,707		58	1285,129		58	1298,454	
59	1271,932		59	1285,352		59	1298,675	
60	1272,156		60	1285,575		60	1298,896	

81°			82°			83°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	1298,896	3,68	0	1312,118	3,65	0	1325,240	3,63
1	1299,117		1	1312,337		1	1325,458	
2	1299,338		2	1312,557		2	1325,676	
3	1299,560		3	1312,776		3	1325,894	
4	1299,781		4	1312,996		4	1326,111	
5	1300,002		5	1313,216		5	1326,329	
6	1300,223		6	1313,435		6	1326,547	
7	1300,444		7	1313,654		7	1326,764	
8	1300,665		8	1313,873		8	1326,982	
9	1300,886		9	1314,093		9	1327,200	
10	1301,107		10	1314,312		10	1327,416	
11	1301,328		11	1314,531		11	1327,635	
12	1301,548		12	1314,750		12	1327,852	
13	1301,769		13	1314,970		13	1328,070	
14	1301,990		14	1315,189		14	1328,287	
15	1302,211		15	1315,408		15	1328,505	
16	1302,432		16	1315,627		16	1328,722	
17	1302,652		17	1315,846		17	1328,940	
18	1302,873		18	1316,065		18	1329,157	
19	1303,094		19	1316,284		19	1329,374	
20	1303,314	3,67	20	1316,503		20	1329,592	3,62
21	1303,535		21	1316,722		21	1329,809	
22	1303,756		22	1316,941		22	1330,026	
23	1303,976		23	1317,160		23	1330,243	
24	1304,197		24	1317,379		24	1330,461	
25	1304,417		25	1317,598		25	1330,678	
26	1304,638		26	1317,817		26	1330,895	
27	1304,858		27	1318,035		27	1331,112	
28	1305,079		28	1318,254		28	1331,329	
29	1305,299		29	1318,473		29	1331,546	
30	1305,520		30	1318,692	3,64	30	1331,762	
31	1305,740		31	1318,910		31	1331,980	
32	1305,960		32	1319,129		32	1332,197	
33	1306,181		33	1319,348		33	1332,414	
34	1306,401		34	1319,566		34	1332,631	
35	1306,621		35	1319,785		35	1332,848	
36	1306,841		36	1320,003		36	1333,065	
37	1307,061		37	1320,222		37	1333,282	
38	1307,282		38	1320,440		38	1333,499	
39	1307,502		39	1320,659		39	1333,715	
40	1307,722		40	1320,877		40	1333,932	3,61
41	1307,942	3,66	41	1321,096		41	1334,149	
42	1308,162		42	1321,314		42	1334,366	
43	1308,382		43	1321,532		43	1334,582	
44	1308,602		44	1321,751		44	1334,799	
45	1308,822		45	1321,969		45	1335,015	
46	1309,042		46	1322,187		46	1335,232	
47	1309,262		47	1322,405		47	1335,449	
48	1309,482		48	1322,624		48	1335,665	
49	1309,701		49	1322,842		49	1335,882	
50	1309,921		50	1323,060		50	1336,098	
51	1310,141		51	1323,278		51	1336,314	
52	1310,361		52	1323,496		52	1336,531	
53	1310,581		53	1323,715		53	1336,747	
54	1310,800		54	1323,932		54	1336,964	
55	1311,020		55	1324,150		55	1337,180	
56	1311,240		56	1324,368		56	1337,396	
57	1311,459		57	1324,586		57	1337,613	
58	1311,679		58	1324,804		58	1337,829	
59	1311,899		59	1325,022		59	1338,045	
60	1312,118		60	1325,240		60	1338,261	

84°			85°			86°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	1338,261	3,60	0	1351,180	3,57	0	1363,997	3,55
1	1338,477		1	1351,395		1	1364,210	
2	1338,694		2	1351,609		2	1364,422	
3	1338,910		3	1351,824		3	1364,635	
4	1339,126		4	1352,038		4	1364,847	
5	1339,342		5	1352,252		5	1365,060	
6	1339,558		6	1352,467		6	1365,273	
7	1339,774		7	1352,681		7	1365,485	
8	1339,990		8	1352,895		8	1365,698	
9	1340,205		9	1353,109		9	1365,910	
10	1340,422		10	1353,323		10	1366,123	
11	1340,637		11	1353,538		11	1366,335	
12	1340,853		12	1353,752		12	1366,548	
13	1341,069		13	1353,966		13	1366,760	
14	1341,285		14	1354,180		14	1366,972	
15	1341,501		15	1354,394		15	1367,184	
16	1341,716		16	1354,608		16	1367,397	
17	1341,932		17	1354,822		17	1367,609	
18	1342,148		18	1355,036		18	1367,821	
19	1342,363		19	1355,250		19	1368,034	
20	1342,579	3,59	20	1355,464		20	1368,246	3,54
21	1342,795		21	1355,678		21	1368,458	
22	1343,010		22	1355,892		22	1368,670	
23	1343,226		23	1356,106		23	1368,882	
24	1343,441		24	1356,319		24	1369,094	
25	1343,657		25	1356,533		25	1369,306	
26	1343,872		26	1356,747		26	1369,518	
27	1344,088		27	1356,961		27	1369,730	
28	1344,303		28	1357,174		28	1369,942	
29	1344,518		29	1357,388		29	1370,154	
30	1344,734		30	1357,601	3,56	30	1370,366	
31	1344,949		31	1357,815		31	1370,578	
32	1345,164		32	1358,029		32	1370,790	
33	1345,379		33	1358,242		33	1371,001	
34	1345,595		34	1358,456		34	1371,213	
35	1345,810		35	1358,669		35	1371,425	
36	1346,025		36	1358,883		36	1371,637	
37	1346,240		37	1359,096		37	1371,848	
38	1346,455		38	1359,309		38	1372,060	
39	1346,670		39	1359,523		39	1372,272	
40	1346,885	3,58	40	1359,736		40	1372,483	3,53
41	1347,100		41	1359,850		41	1372,695	
42	1347,315		42	1360,163		42	1372,906	
43	1347,530		43	1360,376		43	1373,118	
44	1347,745		44	1360,589		44	1373,329	
45	1347,960		45	1360,802		45	1373,541	
46	1348,175		46	1361,016		46	1373,752	
47	1348,390		47	1361,229		47	1373,964	
48	1348,605		48	1361,442		48	1374,175	
49	1348,820		49	1361,655		49	1374,386	
50	1349,034		50	1361,868		50	1374,598	
51	1349,249		51	1362,081		51	1374,809	
52	1349,464		52	1362,294		52	1375,020	
53	1349,678		53	1362,507		53	1375,231	
54	1349,893		54	1362,720		54	1375,443	
55	1350,108		55	1362,933		55	1375,654	
56	1350,322		56	1363,146		56	1375,865	
57	1350,537		57	1363,358		57	1376,076	
58	1350,751		58	1363,571		58	1376,287	
59	1350,966		59	1363,784		59	1376,498	
60	1351,180		60	1363,997		60	1376,709	

87°			88°			89°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	1376,709	3,52	0	1389,317	3,50	0	1401,819	3,47
1	1376,920		1	1389,526		1	1402,026	
2	1377,131		2	1389,735		2	1402,233	
3	1377,342		3	1389,944		3	1402,441	
4	1377,553		4	1390,153		4	1402,648	
5	1377,764		5	1390,363		5	1402,856	
6	1377,975		6	1390,572		6	1403,063	
7	1378,185		7	1390,781		7	1403,270	
8	1378,396		8	1390,990		8	1403,477	
9	1378,607		9	1391,199		9	1403,685	
10	1378,818		10	1391,408		10	1403,892	
11	1379,029		11	1391,617		11	1404,099	
12	1379,239		12	1391,826		12	1404,306	
13	1379,450		13	1392,035		13	1404,513	
14	1379,660		14	1392,243		14	1404,720	
15	1379,871		15	1392,452		15	1404,927	
16	1380,081		16	1392,661		16	1405,134	
17	1380,292		17	1392,870		17	1405,341	
18	1380,502		18	1393,078		18	1405,548	
19	1380,713		19	1393,287		19	1405,755	
20	1380,923		20	1393,496	3,49	20	1405,962	3,46
21	1381,134		21	1393,704		21	1406,169	
22	1381,344		22	1393,913		22	1406,376	
23	1381,555		23	1394,122		23	1406,583	
24	1381,765		24	1394,330		24	1406,789	
25	1381,975		25	1394,539		25	1406,996	
26	1382,185		26	1394,747		26	1407,203	
27	1382,396		27	1394,956		27	1407,410	
28	1382,606		28	1395,164		28	1407,616	
29	1382,816		29	1395,373		29	1407,823	
30	1383,026	3,51	30	1395,581		30	1408,029	
31	1383,236		31	1395,789		31	1408,236	
32	1383,446		32	1395,998		32	1408,443	
33	1383,656		33	1396,206		33	1408,649	
34	1383,866		34	1396,414		34	1408,856	
35	1384,076		35	1396,622		35	1409,062	
36	1384,286		36	1396,831		36	1409,268	
37	1384,496		37	1397,039		37	1409,475	
38	1384,706		38	1397,247		38	1409,681	
39	1384,916		39	1397,455		39	1409,887	
40	1385,126		40	1397,663	3,48	40	1410,093	3,45
41	1385,336		41	1397,871		41	1410,300	
42	1385,546		42	1398,079		42	1410,506	
43	1385,755		43	1398,287		43	1410,713	
44	1385,965		44	1398,495		44	1410,919	
45	1386,175		45	1398,703		45	1411,125	
46	1386,384		46	1398,911		46	1411,331	
47	1386,594		47	1399,119		47	1411,537	
48	1386,804		48	1399,327		48	1411,743	
49	1387,013		49	1399,534		49	1411,949	
50	1387,223		50	1399,742		50	1412,155	
51	1387,432		51	1399,950		51	1412,361	
52	1387,642		52	1400,158		52	1412,567	
53	1387,851		53	1400,366		53	1412,773	
54	1388,061		54	1400,573		54	1412,979	
55	1388,270		55	1400,781		55	1413,185	
56	1388,480		56	1400,988		56	1413,391	
57	1388,689		57	1401,196		57	1413,596	
58	1388,898		58	1401,404		58	1413,802	
59	1389,107		59	1401,611		59	1414,008	
60	1389,317		60	1401,819		60	1414,214	

90°			91°			92°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	1414,214	3,44	0	1426,501	3,40	0	1438,680	3,38
1	1414,419		1	1426,705		1	1438,882	
2	1414,625		2	1426,909		2	1439,084	
3	1414,830		3	1427,112		3	1439,286	
4	1415,036		4	1427,316		4	1439,488	
5	1415,242		5	1427,520		5	1439,690	
6	1415,447		6	1427,724		6	1439,891	
7	1415,653		7	1427,927		7	1440,093	
8	1415,858		8	1428,131		8	1440,295	
9	1416,064		9	1428,335		9	1440,497	
10	1416,269		10	1428,538		10	1440,699	
11	1416,474		11	1428,742		11	1440,901	
12	1416,680		12	1428,945		12	1441,102	
13	1416,885		13	1429,149		13	1441,304	
14	1417,090		14	1429,352		14	1441,506	
15	1417,296	3,43	15	1429,556		15	1441,707	
16	1417,501		16	1429,759		16	1441,909	
17	1417,706		17	1429,963		17	1442,110	
18	1417,911		18	1430,166		18	1442,312	
19	1418,116		19	1430,369		19	1442,513	
20	1418,321		20	1430,573		20	1442,715	3,37
21	1418,526		21	1430,776		21	1442,916	
22	1418,731		22	1430,979		22	1443,118	
23	1418,936		23	1431,182		23	1443,319	
24	1419,141		24	1431,385		24	1443,520	
25	1419,346		25	1431,589		25	1443,722	
26	1419,551		26	1431,792		26	1443,923	
27	1419,756		27	1431,995		27	1444,124	
28	1419,961		28	1432,198		28	1444,326	
29	1420,166		29	1432,401		29	1444,527	
30	1420,371	3,42	30	1432,604	3,39	30	1444,728	
31	1420,576		31	1432,807		31	1444,929	
32	1420,780		32	1433,010		32	1445,130	
33	1420,985		33	1433,213		33	1445,331	
34	1421,190		34	1433,416		34	1445,532	
35	1421,394		35	1433,618		35	1445,733	
36	1421,599		36	1433,821		36	1445,934	
37	1421,804		37	1434,024		37	1446,135	
38	1422,008		38	1434,227		38	1446,336	
39	1422,213		39	1434,429		39	1446,537	
40	1422,417		40	1434,632		40	1446,738	3,36
41	1422,622		41	1434,835		41	1446,939	
42	1422,826		42	1435,037		42	1447,140	
43	1423,030		43	1435,240		43	1447,340	
44	1423,235		44	1435,443		44	1447,541	
45	1423,439	3,41	45	1435,645		45	1447,742	
46	1423,643		46	1435,848		46	1447,942	
47	1423,848		47	1436,050		47	1448,143	
48	1424,052		48	1436,253		48	1448,344	
49	1424,256		49	1436,455		49	1448,544	
50	1424,460		50	1436,657		50	1448,745	
51	1424,665		51	1436,860		51	1448,945	
52	1424,869		52	1437,062		52	1449,146	
53	1425,073		53	1437,264		53	1449,346	
54	1425,277		54	1437,467		54	1449,547	
55	1425,481		55	1437,669		55	1449,747	
56	1425,685		56	1437,871		56	1449,948	
57	1425,889		57	1438,073		57	1450,148	
58	1426,093		58	1438,275		58	1450,348	
59	1426,297		59	1438,477		59	1450,548	
60	1426,501		60	1438,680		60	1450,749	

93°			94°			95°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	1450,749	3,35	0	1462,707	3,31	0	1474,555	3,28
1	1450,949		1	1462,906		1	1474,751	
2	1451,149		2	1463,104		2	1474,948	
3	1451,349		3	1463,302		3	1475,144	
4	1451,549		4	1463,501		4	1475,340	
5	1451,750		5	1463,699		5	1475,537	
6	1451,950		6	1463,897		6	1475,733	
7	1452,150		7	1464,095		7	1475,930	
8	1452,350		8	1464,293		8	1476,126	
9	1452,550		9	1464,492		9	1476,322	
10	1452,750		10	1464,690		10	1476,518	
11	1452,950		11	1464,888		11	1476,715	
12	1453,149		12	1465,086		12	1476,911	
13	1453,349		13	1465,284		13	1477,107	
14	1453,549		14	1465,482		14	1477,303	
15	1453,749	3,34	15	1465,680		15	1477,499	
16	1453,949		16	1465,878		16	1477,695	
17	1454,148		17	1466,075		17	1477,891	
18	1454,348		18	1466,273		18	1478,087	
19	1454,548		19	1466,471		19	1478,283	
20	1454,747		20	1466,669	3,30	20	1478,479	3,27
21	1454,947		21	1466,867		21	1478,675	
22	1455,146		22	1467,064		22	1478,871	
23	1455,346		23	1467,262		23	1479,066	
24	1455,545		24	1467,460		24	1479,262	
25	1455,745		25	1467,657		25	1479,458	
26	1455,944		26	1467,855		26	1479,654	
27	1456,144		27	1468,053		27	1479,849	
28	1456,343		28	1468,250		28	1480,045	
29	1456,543		29	1468,448		29	1480,241	
30	1456,742	3,33	30	1468,645		30	1480,436	
31	1456,941		31	1468,842		31	1480,632	
32	1457,140		32	1469,040		32	1480,827	
33	1457,340		33	1469,237		33	1481,023	
34	1457,539		34	1469,435		34	1481,218	
35	1457,738		35	1469,632		35	1481,414	
36	1457,937		36	1469,829		36	1481,609	
37	1458,136		37	1470,026		37	1481,805	
38	1458,335		38	1470,224		38	1482,000	
39	1458,534		39	1470,421		39	1482,195	
40	1458,733		40	1470,618	3,29	40	1482,392	3,26
41	1458,932		41	1470,815		41	1482,586	
42	1459,131		42	1471,012		42	1482,781	
43	1459,330		43	1471,209		43	1482,976	
44	1459,529		44	1471,406		44	1483,171	
45	1459,728	3,32	45	1471,603		45	1483,367	
46	1459,927		46	1471,800		46	1483,562	
47	1460,126		47	1471,997		47	1483,757	
48	1460,325		48	1472,194		48	1483,952	
49	1460,523		49	1472,391		49	1484,147	
50	1460,722		50	1472,588		50	1484,342	
51	1460,921		51	1472,785		51	1484,536	
52	1461,119		52	1472,981		52	1484,731	
53	1461,318		53	1473,178		53	1484,926	
54	1461,517		54	1473,375		54	1485,121	
55	1461,715		55	1473,572		55	1485,316	
56	1461,914		56	1473,768		56	1485,511	
57	1462,112		57	1473,965		57	1485,706	
58	1462,311		58	1474,162		58	1485,900	
59	1462,509		59	1474,358		59	1486,095	
60	1462,707		60	1474,555		60	1486,290	

96°			97°			98°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
08	1486,290	3,25	08	1497,911	3,21	08	1509,419	3,18
1	1486,484	1	1	1498,104	1	1	1509,610	1
2	1486,679	2	2	1498,297	2	2	1509,801	2
3	1486,873	3	3	1498,490	3	3	1509,991	3
4	1487,068	4	4	1498,682	4	4	1510,182	4
5	1487,263	5	5	1498,875	5	5	1510,373	5
6	1487,457	6	6	1499,067	6	6	1510,564	6
7	1487,651	7	7	1499,260	7	7	1510,754	7
8	1487,846	8	8	1499,452	8	8	1510,945	8
9	1488,040	9	9	1499,646	9	9	1511,135	9
10	1488,234	01	10	1499,837	01	10	1511,326	01
11	1488,429	11	11	1500,030	11	11	1511,517	11
12	1488,623	21	12	1500,222	21	12	1511,707	21
13	1488,817	31	13	1500,415	31	13	1511,897	31
14	1489,011	41	14	1500,607	41	14	1512,088	41
15	1489,206	51	15	1500,799	51	15	1512,278	51
16	1489,400	3,24	16	1500,991	01	16	1512,468	01
17	1489,594	71	17	1501,184	71	17	1512,659	71
18	1489,788	81	18	1501,376	81	18	1512,849	81
19	1489,982	91	19	1501,568	91	19	1513,039	91
20	1490,176	02	20	1501,760	02	20	1513,229	02
21	1490,370	12	21	1501,952	3,20	21	1513,420	3,17
22	1490,564	22	22	1502,144	12	22	1513,610	12
23	1490,758	32	23	1502,336	22	23	1513,800	22
24	1490,952	42	24	1502,528	32	24	1513,990	32
25	1491,146	52	25	1502,720	42	25	1514,180	42
26	1491,340	62	26	1502,912	52	26	1514,370	52
27	1491,534	72	27	1503,104	62	27	1514,560	62
28	1491,727	82	28	1503,296	72	28	1514,750	72
29	1491,921	92	29	1503,488	82	29	1514,940	82
30	1492,115	03	30	1503,680	92	30	1515,130	92
31	1492,308	3,23	31	1503,871	03	31	1515,320	03
32	1492,502	13	32	1504,063	13	32	1515,510	13
33	1492,696	23	33	1504,255	23	33	1515,699	23
34	1492,889	33	34	1504,447	33	34	1515,889	33
35	1493,083	43	35	1504,638	43	35	1516,079	43
36	1493,276	53	36	1504,830	53	36	1516,269	53
37	1493,470	63	37	1505,021	63	37	1516,458	63
38	1493,663	73	38	1505,213	73	38	1516,648	73
39	1493,857	83	39	1505,405	83	39	1516,838	83
40	1494,050	93	40	1505,596	93	40	1517,027	93
41	1494,244	04	41	1505,787	3,19	41	1517,217	3,16
42	1494,437	14	42	1505,979	04	42	1517,406	14
43	1494,630	24	43	1506,170	14	43	1517,596	24
44	1494,823	34	44	1506,362	24	44	1517,785	34
45	1495,017	44	45	1506,553	34	45	1517,975	44
46	1495,210	3,22	46	1506,744	44	46	1518,164	54
47	1495,403	54	47	1506,935	54	47	1518,353	64
48	1495,596	64	48	1507,127	64	48	1518,543	74
49	1495,789	74	49	1507,318	74	49	1518,732	84
50	1495,982	84	50	1507,509	84	50	1518,921	94
51	1496,175	94	51	1507,700	94	51	1519,110	05
52	1496,368	05	52	1507,891	05	52	1519,300	15
53	1496,561	15	53	1508,083	15	53	1519,489	25
54	1496,754	25	54	1508,274	25	54	1519,678	35
55	1496,947	35	55	1508,465	35	55	1519,867	45
56	1497,140	45	56	1508,656	45	56	1520,056	55
57	1497,333	55	57	1508,847	55	57	1520,245	65
58	1497,526	65	58	1509,037	65	58	1520,434	75
59	1497,719	75	59	1509,228	75	59	1520,623	85
60	1497,911	85	60	1509,419	85	60	1520,812	95

99°			100°			101°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	1520,812	3,15	0	1532,089	3,12	0	1543,249	3,08
1	1521,001	1	1	1532,276	1	1	1543,434	1
2	1521,190	2	2	1532,463	2	2	1543,619	2
3	1521,379	3	3	1532,650	3	3	1543,804	3
4	1521,567	4	4	1532,837	4	4	1543,989	4
5	1521,756	5	5	1533,023	5	5	1544,174	5
6	1521,945	6	6	1533,210	6	6	1544,359	6
7	1522,134	7	7	1533,397	7	7	1544,544	7
8	1522,322	8	8	1533,583	8	8	1544,728	8
9	1522,511	9	9	1533,770	9	9	1544,913	9
10	1522,699	01	10	1533,957	01	10	1545,098	01
11	1522,888	11	11	1534,144	11	11	1545,282	11
12	1523,077	21	12	1534,330	21	12	1545,467	21
13	1523,265	31	13	1534,517	31	13	1545,652	31
14	1523,454	41	14	1534,703	41	14	1545,836	41
15	1523,642	51	15	1534,890	51	15	1546,021	51
16	1523,830	61	16	1535,076	61	16	1546,205	61
17	1524,019	71	17	1535,263	71	17	1546,390	71
18	1524,207	81	18	1535,449	81	18	1546,574	81
19	1524,395	91	19	1535,636	91	19	1546,759	91
20	1524,584	02	20	1535,822	02	20	1546,943	02
21	1524,772	12	21	1536,008	12	21	1547,128	12
22	1524,960	22	22	1536,195	22	22	1547,312	22
23	1525,148	32	23	1536,381	32	23	1547,496	32
24	1525,337	42	24	1536,567	42	24	1547,680	42
25	1525,525	52	25	1536,753	52	25	1547,865	52
26	1525,713	62	26	1536,939	62	26	1548,049	62
27	1525,901	72	27	1537,126	72	27	1548,233	72
28	1526,089	82	28	1537,312	82	28	1548,417	82
29	1526,277	92	29	1537,498	92	29	1548,601	92
30	1526,465	03	30	1537,684	03	30	1548,785	03
31	1526,653	13	31	1537,870	13	31	1548,969	13
32	1526,841	23	32	1538,056	23	32	1549,153	23
33	1527,029	33	33	1538,241	33	33	1549,337	33
34	1527,216	43	34	1538,427	43	34	1549,521	43
35	1527,404	53	35	1538,613	53	35	1549,705	53
36	1527,592	63	36	1538,799	63	36	1549,889	63
37	1527,780	73	37	1538,985	73	37	1550,073	73
38	1527,967	83	38	1539,171	83	38	1550,257	83
39	1528,155	93	39	1539,356	93	39	1550,440	93
40	1528,343	04	40	1539,542	04	40	1550,624	04
41	1528,530	14	41	1539,728	14	41	1550,808	14
42	1528,718	24	42	1539,913	24	42	1550,992	24
43	1528,906	34	43	1540,099	34	43	1551,175	34
44	1529,093	44	44	1540,285	44	44	1551,359	44
45	1529,281	54	45	1540,470	54	45	1551,542	54
46	1529,468	64	46	1540,656	64	46	1551,726	64
47	1529,655	74	47	1540,841	74	47	1551,909	74
48	1529,843	84	48	1541,026	84	48	1552,092	84
49	1530,030	94	49	1541,212	94	49	1552,276	94
50	1530,217	05	50	1541,397	05	50	1552,460	05
51	1530,405	15	51	1541,582	15	51	1552,643	15
52	1530,592	25	52	1541,768	25	52	1552,826	25
53	1530,779	35	53	1541,953	35	53	1553,010	35
54	1530,966	45	54	1542,138	45	54	1553,193	45
55	1531,153	55	55	1542,324	55	55	1553,376	55
56	1531,341	65	56	1542,509	65	56	1553,559	65
57	1531,528	75	57	1542,694	75	57	1553,743	75
58	1531,715	85	58	1542,879	85	58	1553,926	85
59	1531,902	95	59	1543,064	95	59	1554,109	95
60	1532,089	06	60	1543,249	06	60	1554,292	06

102°			103°			104°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	1554,292	3,05	0	1565,216	3,02	0	1576,021	2,98
1	1554,475	1	1	1565,397	1	1	1576,201	1
2	1554,658	2	2	1565,578	2	2	1576,380	2
3	1554,841	3	3	1565,759	3	3	1576,559	3
4	1555,024	4	4	1565,940	4	4	1576,738	4
5	1555,207	5	5	1566,121	5	5	1576,917	5
6	1555,390	6	6	1566,302	6	6	1577,095	6
7	1555,573	7	7	1566,483	7	7	1577,274	7
8	1555,755	8	8	1566,664	8	8	1577,453	8
9	1555,938	9	9	1566,845	9	9	1577,632	9
10	1556,121	01	10	1567,026	01	10	1577,811	01
11	1556,304	11	11	1567,206	11	11	1577,989	11
12	1556,486	21	12	1567,387	21	12	1578,168	21
13	1556,669	31	13	1567,568	31	13	1578,347	31
14	1556,851	41	14	1567,748	41	14	1578,525	41
15	1557,034	51	15	1567,929	51	15	1578,701	51
16	1557,217	61	16	1568,109	3,01	16	1578,883	61
17	1557,399	71	17	1568,292	71	17	1579,061	71
18	1557,582	81	18	1568,470	81	18	1579,240	81
19	1557,764	91	19	1568,651	91	19	1579,418	91
20	1557,947	02	20	1568,831	02	20	1579,597	02
21	1558,129	3,04	21	1569,012	12	21	1579,775	2,97
22	1558,311	22	22	1569,192	22	22	1579,953	22
23	1558,494	32	23	1569,373	32	23	1580,132	32
24	1558,676	42	24	1569,553	42	24	1580,310	42
25	1558,858	52	25	1569,733	52	25	1580,488	52
26	1559,040	62	26	1569,913	62	26	1580,667	62
27	1559,223	72	27	1570,093	72	27	1580,845	72
28	1559,405	82	28	1570,274	82	28	1581,023	82
29	1559,587	92	29	1570,454	92	29	1581,201	92
30	1559,769	03	30	1570,634	03	30	1581,379	03
31	1559,951	13	31	1570,814	13	31	1581,557	13
32	1560,133	23	32	1570,994	23	32	1581,735	23
33	1560,315	33	33	1571,174	33	33	1581,913	33
34	1560,497	43	34	1571,354	43	34	1582,091	43
35	1560,679	53	35	1571,534	53	35	1582,269	53
36	1560,861	63	36	1571,714	63	36	1582,447	63
37	1561,043	73	37	1571,894	73	37	1582,625	73
38	1561,224	83	38	1572,073	83	38	1582,803	83
39	1561,406	93	39	1572,253	93	39	1582,981	93
40	1561,588	04	40	1572,433	04	40	1583,158	04
41	1561,770	3,03	41	1572,613	14	41	1583,336	2,96
42	1561,951	24	42	1572,792	24	42	1583,514	24
43	1562,133	34	43	1572,972	34	43	1583,691	34
44	1562,315	44	44	1573,152	44	44	1583,869	44
45	1562,496	54	45	1573,331	54	45	1584,047	54
46	1562,678	64	46	1573,511	2,99	46	1584,224	64
47	1562,860	74	47	1573,691	74	47	1584,402	74
48	1563,141	84	48	1573,870	84	48	1584,579	84
49	1563,222	94	49	1574,050	94	49	1584,757	94
50	1563,404	05	50	1574,229	05	50	1584,934	05
51	1563,585	15	51	1574,408	15	51	1585,112	15
52	1563,767	25	52	1574,588	25	52	1585,289	25
53	1563,948	35	53	1574,767	35	53	1585,466	35
54	1564,129	45	54	1574,946	45	54	1585,644	45
55	1564,311	55	55	1575,126	55	55	1585,821	55
56	1564,492	65	56	1575,305	65	56	1585,998	65
57	1564,673	75	57	1575,484	75	57	1586,175	75
58	1564,854	85	58	1575,663	85	58	1586,352	85
59	1565,035	95	59	1575,842	95	59	1586,530	95
60	1565,216	06	60	1576,021	06	60	1586,707	06

103°			106°			107°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	1586,707	2,95	0	1597,271	2,92	0	1607,714	2,88
1	1586,884		1	1597,446		1	1607,887	
2	1587,061		2	1597,621		2	1608,060	
3	1587,238		3	1597,796		3	1608,233	
4	1587,415		4	1597,971		4	1608,406	
5	1587,592		5	1598,146		5	1608,578	
6	1587,769		6	1598,321		6	1608,751	
7	1587,945		7	1598,496		7	1608,924	
8	1588,122		8	1598,670		8	1609,097	
9	1588,299		9	1598,845		9	1609,269	
10	1588,476		10	1599,020		10	1609,442	
11	1588,653		11	1599,195		11	1609,615	
12	1588,829		12	1599,369		12	1609,788	
13	1589,006		13	1599,544		13	1609,960	
14	1589,182		14	1599,719		14	1610,133	
15	1589,359		15	1599,893	2,91	15	1610,305	
16	1589,536		16	1600,068		16	1610,478	
17	1589,712		17	1600,242		17	1610,650	
18	1589,889		18	1600,417		18	1610,823	
19	1590,065		19	1600,591		19	1610,995	
20	1590,242	2,94	20	1600,765		20	1611,167	2,87
21	1590,418		21	1600,940		21	1611,340	
22	1590,594		22	1601,114		22	1611,512	
23	1590,771		23	1601,289		23	1611,684	
24	1590,947		24	1601,463		24	1611,857	
25	1591,123		25	1601,637		25	1612,029	
26	1591,299		26	1601,811		26	1612,201	
27	1591,476		27	1601,985		27	1612,373	
28	1591,652		28	1602,159		28	1612,545	
29	1591,828		29	1602,334		29	1612,717	
30	1592,004		30	1602,508	2,90	30	1612,889	
31	1592,180		31	1602,682		31	1613,061	
32	1592,356		32	1602,856		32	1613,233	
33	1592,532		33	1603,029		33	1613,405	
34	1592,708		34	1603,203		34	1613,577	
35	1592,884		35	1603,377		35	1613,749	
36	1593,060		36	1603,551		36	1613,921	
37	1593,236		37	1603,725		37	1614,092	
38	1593,411		38	1603,899		38	1614,264	
39	1593,587		39	1604,073		39	1614,436	
40	1593,763	2,93	40	1604,246		40	1614,608	2,86
41	1593,939		41	1604,420		41	1614,779	
42	1594,114		42	1604,594		42	1614,951	
43	1594,290		43	1604,767		43	1615,122	
44	1594,466		44	1604,941		44	1615,294	
45	1594,641		45	1605,115	2,89	45	1615,465	
46	1594,817		46	1605,288		46	1615,637	
47	1594,992		47	1605,462		47	1615,808	
48	1595,168		48	1605,635		48	1615,980	
49	1595,343		49	1605,808		49	1616,151	
50	1595,519		50	1605,982		50	1616,322	
51	1595,694		51	1606,155		51	1616,494	
52	1595,869		52	1606,328		52	1616,665	
53	1596,045		53	1606,502		53	1616,836	
54	1596,220		54	1606,575		54	1617,007	
55	1596,395		55	1606,848		55	1617,179	
56	1596,570		56	1607,021		56	1617,350	
57	1596,746		57	1607,195		57	1617,521	
58	1596,921		58	1607,368		58	1617,692	
59	1597,096		59	1607,541		59	1617,863	
60	1597,271		60	1607,714		60	1618,034	

108°			109°			110°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	1618,034	2,85	0	1628,231	2,82	0	1638,304	2,78
1	1618,205		1	1628,400		1	1638,471	
2	1618,376		2	1628,569		2	1638,638	
3	1618,547		3	1628,738		3	1638,804	
4	1618,718		4	1628,906		4	1638,971	
5	1618,888		5	1629,075		5	1639,138	
6	1619,059		6	1629,244		6	1639,307	
7	1619,230		7	1629,413		7	1639,473	
8	1619,401		8	1629,581		8	1639,638	
9	1619,571		9	1629,750		9	1639,804	
10	1619,742		10	1629,919		10	1639,971	
11	1619,913		11	1630,087		11	1640,137	
12	1620,083		12	1630,256		12	1640,304	
13	1620,254		13	1630,424		13	1640,470	
14	1620,424		14	1630,593		14	1640,637	
15	1620,595		15	1630,761	2,81	15	1640,803	2,77
16	1620,765		16	1630,929		16	1640,969	
17	1620,936		17	1631,098		17	1641,135	
18	1621,106		18	1631,266		18	1641,302	
19	1621,276		19	1631,434		19	1641,468	
20	1621,447	2,84	20	1631,603		20	1641,634	
21	1621,617		21	1631,771		21	1641,800	
22	1621,787		22	1631,939		22	1641,966	
23	1621,957		23	1632,107		23	1642,132	
24	1622,128		24	1632,275		24	1642,298	
25	1622,298		25	1632,443		25	1642,464	
26	1622,468		26	1632,611		26	1642,630	
27	1622,638		27	1632,779		27	1642,796	
28	1622,808		28	1632,947		28	1642,962	
29	1622,978		29	1633,115		29	1643,128	
30	1623,148		30	1633,283	2,80	30	1643,294	2,76
31	1623,318		31	1633,451		31	1643,460	
32	1623,488		32	1633,618		32	1643,625	
33	1623,658		33	1633,787		33	1643,791	
34	1623,827		34	1633,954		34	1643,957	
35	1623,997		35	1634,122		35	1644,122	
36	1624,167		36	1634,290		36	1644,288	
37	1624,337		37	1634,457		37	1644,454	
38	1624,506		38	1634,625		38	1644,619	
39	1624,676		39	1634,793		39	1644,785	
40	1624,846	2,83	40	1634,960		40	1644,950	
41	1625,015		41	1635,128		41	1645,116	
42	1625,185		42	1635,295		42	1645,281	
43	1625,355		43	1635,463		43	1645,450	
44	1625,524		44	1635,630		44	1645,612	
45	1625,693		45	1635,797	2,79	45	1645,781	2,75
46	1625,863		46	1635,965		46	1645,942	
47	1626,032		47	1636,132		47	1646,108	
48	1626,202		48	1636,299		48	1646,273	
49	1626,371		49	1636,467		49	1646,438	
50	1626,540		50	1636,634		50	1646,603	
51	1626,709		51	1636,801		51	1646,768	
52	1626,879		52	1636,968		52	1646,933	
53	1627,048		53	1637,135		53	1647,098	
54	1627,217		54	1637,302		54	1647,263	
55	1627,386		55	1637,469		55	1647,428	
56	1627,555		56	1637,636		56	1647,593	
57	1627,724		57	1637,803		57	1647,758	
58	1627,893		58	1637,970		58	1647,923	
59	1628,062		59	1638,137		59	1648,088	
60	1628,231		60	1638,304		60	1648,252	

111°			112°			113°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	1648,252	2,74	0	1658,075	2,70	0	1667,772	2,67
1	1648,417		1	1658,238		1	1667,932	
2	1648,582		2	1658,400		2	1668,093	
3	1648,747		3	1658,563		3	1668,253	
4	1648,911		4	1658,725		4	1668,414	
5	1649,076		5	1658,888		5	1668,574	
6	1649,240		6	1659,050		6	1668,734	
7	1649,405		7	1659,213		7	1668,895	
8	1649,569		8	1659,375		8	1669,055	
9	1649,734		9	1659,538		9	1669,215	
10	1649,898		10	1659,700		10	1669,375	
11	1650,063		11	1659,862		11	1669,536	
12	1650,227		12	1660,025		12	1669,696	
13	1650,391		13	1660,187		13	1669,856	
14	1650,556		14	1660,349		14	1670,016	
15	1650,720	2,73	15	1660,511		15	1670,176	2,66
16	1650,884		16	1660,673		16	1670,336	
17	1651,048		17	1660,835		17	1670,496	
18	1651,212		18	1660,997		18	1670,656	
19	1651,377		19	1661,159		19	1670,816	
20	1651,541		20	1661,321	2,69	20	1670,976	
21	1651,705		21	1661,483		21	1671,135	
22	1651,869		22	1661,645		22	1671,295	
23	1652,033		23	1661,807		23	1671,455	
24	1652,197		24	1661,969		24	1671,615	
25	1652,361		25	1662,131		25	1671,774	
26	1652,524		26	1662,292		26	1671,934	
27	1652,688		27	1662,454		27	1672,094	
28	1652,852		28	1662,616		28	1672,253	
29	1653,016		29	1662,778		29	1672,413	
30	1653,179	2,72	30	1662,939		30	1672,572	2,65
31	1653,343		31	1663,101		31	1672,732	
32	1653,507		32	1663,262		32	1672,891	
33	1653,670		33	1663,424		33	1673,051	
34	1653,834		34	1663,583		34	1673,210	
35	1653,998		35	1663,747		35	1673,369	
36	1654,161		36	1663,908		36	1673,529	
37	1654,325		37	1664,070		37	1673,688	
38	1654,488		38	1664,231		38	1673,847	
39	1654,651		39	1664,392		39	1674,006	
40	1654,815		40	1664,554	2,68	40	1674,165	
41	1654,978		41	1664,715		41	1674,325	
42	1655,141		42	1664,876		42	1674,484	
43	1655,305		43	1665,037		43	1674,643	
44	1655,468		44	1665,198		44	1674,802	
45	1655,631	2,71	45	1665,359		45	1674,961	2,64
46	1655,794		46	1665,520		46	1675,120	
47	1655,957		47	1665,681		47	1675,278	
48	1656,121		48	1665,842		48	1675,437	
49	1656,284		49	1666,003		49	1675,596	
50	1656,447		50	1666,164		50	1675,755	
51	1656,610		51	1666,325		51	1675,914	
52	1656,773		52	1666,486		52	1676,073	
53	1656,936		53	1666,647		53	1676,231	
54	1657,099		54	1666,808		54	1676,390	
55	1657,261		55	1666,968		55	1676,549	
56	1657,424		56	1667,129		56	1676,707	
57	1657,587		57	1667,290		57	1676,866	
58	1657,750		58	1667,450		58	1677,024	
59	1657,913		59	1667,611		59	1677,183	
60	1658,075		60	1667,772		60	1677,341	

114°			115°			116°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	1677,341	2,63	0	1686,783	2,60	0	1696,096	2,57
1	1677,500		1	1686,939		1	1696,250	
2	1677,658		2	1687,095		2	1696,404	
3	1677,816		3	1687,252		3	1696,558	
4	1677,975		4	1687,408		4	1696,712	
5	1678,133		5	1687,564		5	1696,866	
6	1678,291		6	1687,720		6	1697,020	
7	1678,449		7	1687,876		7	1697,174	
8	1678,607		8	1688,032		8	1697,328	
9	1678,766		9	1688,188		9	1697,482	
10	1678,924		10	1688,344		10	1697,636	
11	1679,082		11	1688,500		11	1697,790	
12	1679,240		12	1688,656		12	1697,943	
13	1679,398		13	1688,812		13	1698,097	
14	1679,556		14	1688,967		14	1698,251	
15	1679,714		15	1689,123		15	1698,404	2,56
16	1679,871		16	1689,279		16	1698,558	
17	1680,029		17	1689,435		17	1698,711	
18	1680,187		18	1689,590		18	1698,865	
19	1680,345		19	1689,746		19	1699,018	
20	1680,503	2,62	20	1689,902	2,59	20	1699,172	
21	1680,660		21	1690,057		21	1699,325	
22	1680,818		22	1690,213		22	1699,479	
23	1680,976		23	1690,368		23	1699,632	
24	1681,133		24	1690,524		24	1699,785	
25	1681,291		25	1690,679		25	1699,939	
26	1681,448		26	1690,834		26	1700,092	
27	1681,606		27	1690,990		27	1700,245	
28	1681,763		28	1691,145		28	1700,398	
29	1681,921		29	1691,300		29	1700,551	
30	1682,078		30	1691,456		30	1700,704	2,55
31	1682,235		31	1691,611		31	1700,857	
32	1682,393		32	1691,766		32	1701,010	
33	1682,550		33	1691,921		33	1701,163	
34	1682,707		34	1692,076		34	1701,316	
35	1682,864		35	1692,231		35	1701,469	
36	1683,022		36	1692,386		36	1701,622	
37	1683,179		37	1692,541		37	1701,775	
38	1683,336		38	1692,696		38	1701,928	
39	1683,493		39	1692,851		39	1702,080	
40	1683,650	2,61	40	1693,006	2,58	40	1702,233	
41	1683,807		41	1693,161		41	1702,386	
42	1683,964		42	1693,316		42	1702,539	
43	1684,121		43	1693,470		43	1702,691	
44	1684,278		44	1693,625		44	1702,844	
45	1684,434		45	1693,780		45	1702,996	2,54
46	1684,591		46	1693,935		46	1703,149	
47	1684,748		47	1694,089		47	1703,301	
48	1684,905		48	1694,243		48	1703,454	
49	1685,062		49	1694,398		49	1703,606	
50	1685,218		50	1694,553		50	1703,759	
51	1685,375		51	1694,707		51	1703,911	
52	1685,531		52	1694,862		52	1704,063	
53	1685,688		53	1695,016		53	1704,215	
54	1685,844		54	1695,171		54	1704,368	
55	1686,001		55	1695,329		55	1704,520	
56	1686,157		56	1695,479		56	1704,672	
57	1686,314		57	1695,634		57	1704,824	
58	1686,470		58	1695,788		58	1704,976	
59	1686,627		59	1695,942		59	1705,128	
60	1686,783		60	1696,096		60	1705,280	

117°			118°			119°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	1705,280	2,53	0	1714,335	2,50	0	1723,258	2,46
1	1705,432		1	1714,484		1	1723,406	
2	1705,584		2	1714,634		2	1723,554	
3	1705,736		3	1714,784		3	1723,701	
4	1705,888		4	1714,934		4	1723,849	
5	1706,040		5	1715,083		5	1723,996	
6	1706,192		6	1715,233		6	1724,143	
7	1706,343		7	1715,382		7	1724,291	
8	1706,495		8	1715,532		8	1724,438	
9	1706,647		9	1715,682		9	1724,586	
10	1706,798		10	1715,831		10	1724,733	
11	1706,950		11	1715,980		11	1724,880	
12	1707,102		12	1716,130		12	1725,027	
13	1707,253		13	1716,279		13	1725,174	
14	1707,405		14	1716,428		14	1725,322	
15	1707,556		15	1716,578	2,49	15	1725,469	2,45
16	1707,707		16	1716,727		16	1725,616	
17	1707,859		17	1716,876		17	1725,763	
18	1708,010		18	1717,025		18	1725,910	
19	1708,162		19	1717,175		19	1726,057	
20	1708,313	2,52	20	1717,324		20	1726,204	
21	1708,464		21	1717,473		21	1726,351	
22	1708,615		22	1717,622		22	1726,498	
23	1708,766		23	1717,771		23	1726,644	
24	1708,918		24	1717,920		24	1726,791	
25	1709,069		25	1718,069		25	1726,938	
26	1709,220		26	1718,218		26	1727,085	
27	1709,371		27	1718,366		27	1727,231	
28	1709,522		28	1718,513		28	1727,378	
29	1709,673		29	1718,664		29	1727,524	
30	1709,824		30	1718,813	2,48	30	1727,671	2,44
31	1709,975		31	1718,961		31	1727,818	
32	1710,125		32	1719,110		32	1727,964	
33	1710,276		33	1719,259		33	1728,110	
34	1710,427		34	1719,407		34	1728,257	
35	1710,578		35	1719,556		35	1728,403	
36	1710,728		36	1719,704		36	1728,550	
37	1710,879		37	1719,853		37	1728,696	
38	1711,030		38	1720,001		38	1728,842	
39	1711,180		39	1720,150		39	1728,988	
40	1711,331	2,51	40	1720,298		40	1729,135	
41	1711,481		41	1720,447		41	1729,281	
42	1711,632		42	1720,595		42	1729,427	
43	1711,782		43	1720,743		43	1729,573	
44	1711,933		44	1720,891		44	1729,719	
45	1712,083		45	1721,040	2,47	45	1729,865	2,43
46	1712,234		46	1721,188		46	1730,011	
47	1712,384		47	1721,334		47	1730,157	
48	1712,534		48	1721,484		48	1730,303	
49	1712,684		49	1721,632		49	1730,449	
50	1712,835		50	1721,780		50	1730,594	
51	1712,985		51	1721,928		51	1730,740	
52	1713,135		52	1722,076		52	1730,886	
53	1713,285		53	1722,224		53	1731,032	
54	1713,435		54	1722,372		54	1731,176	
55	1713,585		55	1722,520		55	1731,323	
56	1713,735		56	1722,667		56	1731,469	
57	1713,885		57	1722,815		57	1731,614	
58	1714,035		58	1722,963		58	1731,760	
59	1714,185		59	1723,111		59	1731,905	
60	1714,335		60	1723,258		60	1732,051	

120°			121°			122°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	1732,051	2,42	0	1740,711	2,38	0	1749,239	2,35
1	1732,196	1	1	1740,855	1	1	1749,380	1
2	1732,342	2	2	1740,998	2	2	1749,521	2
3	1732,487	3	3	1741,141	3	3	1749,662	3
4	1732,632	4	4	1741,284	4	4	1749,803	4
5	1732,778	5	5	1741,427	5	5	1749,944	5
6	1732,923	6	6	1741,570	6	6	1750,085	6
7	1733,068	7	7	1741,713	7	7	1750,226	7
8	1733,213	8	8	1741,856	8	8	1750,366	8
9	1733,358	9	9	1741,999	9	9	1750,507	9
10	1733,503	10	10	1742,142	10	10	1750,648	10
11	1733,646	11	11	1742,285	11	11	1750,788	11
12	1733,793	12	12	1742,428	12	12	1750,929	12
13	1733,938	13	13	1742,570	13	13	1751,070	13
14	1734,083	14	14	1742,713	14	14	1751,210	14
15	1734,228	2,41	15	1742,856	15	15	1751,351	2,34
16	1734,373	16	16	1742,999	16	16	1751,491	16
17	1734,518	17	17	1743,141	17	17	1751,631	17
18	1734,663	18	18	1743,284	18	18	1751,772	18
19	1734,808	19	19	1743,426	19	19	1751,912	19
20	1734,952	20	20	1743,569	2,37	20	1752,052	20
21	1735,097	21	21	1743,711	21	21	1752,193	21
22	1735,242	22	22	1743,854	22	22	1752,333	22
23	1735,386	23	23	1743,996	23	23	1752,473	23
24	1735,531	24	24	1744,139	24	24	1752,613	24
25	1735,675	25	25	1744,281	25	25	1752,754	25
26	1735,820	26	26	1744,423	26	26	1752,894	26
27	1735,964	27	27	1744,565	27	27	1753,034	27
28	1736,109	28	28	1744,708	28	28	1753,174	28
29	1736,253	29	29	1744,850	29	29	1753,314	29
30	1736,398	2,40	30	1744,992	30	30	1753,453	2,33
31	1736,542	31	31	1745,134	31	31	1753,593	31
32	1736,686	32	32	1745,276	32	32	1753,733	32
33	1736,830	33	33	1745,418	33	33	1753,873	33
34	1736,975	34	34	1745,560	34	34	1754,013	34
35	1737,119	35	35	1745,702	35	35	1754,152	35
36	1737,263	36	36	1745,844	36	36	1754,292	36
37	1737,407	37	37	1745,986	37	37	1754,432	37
38	1737,551	38	38	1746,128	38	38	1754,572	38
39	1737,695	39	39	1746,270	39	39	1754,711	39
40	1737,839	40	40	1746,412	2,36	40	1754,851	40
41	1737,983	41	41	1746,553	41	41	1754,990	41
42	1738,127	42	42	1746,695	42	42	1755,130	42
43	1738,271	43	43	1746,837	43	43	1755,269	43
44	1738,415	44	44	1746,978	44	44	1755,409	44
45	1738,559	2,39	45	1747,120	45	45	1755,546	2,32
46	1738,702	46	46	1747,261	46	46	1755,687	46
47	1738,846	47	47	1747,403	47	47	1755,827	47
48	1738,990	48	48	1747,544	48	48	1755,966	48
49	1739,133	49	49	1747,686	49	49	1756,105	49
50	1739,277	50	50	1747,827	50	50	1756,244	50
51	1739,421	51	51	1747,969	51	51	1756,383	51
52	1739,564	52	52	1748,110	52	52	1756,523	52
53	1739,708	53	53	1748,251	53	53	1756,662	53
54	1739,851	54	54	1748,393	54	54	1756,801	54
55	1739,995	55	55	1748,534	55	55	1756,940	55
56	1740,138	56	56	1748,675	56	56	1757,079	56
57	1740,281	57	57	1748,816	57	57	1757,218	57
58	1740,425	58	58	1748,957	58	58	1757,357	58
59	1740,568	59	59	1749,098	59	59	1757,495	59
60	1740,711	60	60	1749,239	60	60	1757,634	60

123°			124°			125°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	1757,634	2,31	0	1765,895	2,26	0	1774,022	2,24
1	1757,773	1	1	1766,032	1	1	1774,156	1
2	1757,912	2	2	1766,168	2	2	1774,290	2
3	1758,051	3	3	1766,305	3	3	1774,424	3
4	1758,189	4	4	1766,441	4	4	1774,559	4
5	1758,328	5	5	1766,577	5	5	1774,693	5
6	1758,466	6	6	1766,714	6	6	1774,827	6
7	1758,605	7	7	1766,850	7	7	1774,961	7
8	1758,743	8	8	1766,986	8	8	1775,095	8
9	1758,882	9	9	1767,123	9	9	1775,229	9
10	1759,020	2,30	10	1767,259	10	10	1775,363	10
11	1759,159	11	11	1767,395	11	11	1775,497	11
12	1759,297	12	12	1767,531	12	12	1775,631	12
13	1759,436	13	13	1767,667	13	13	1775,765	13
14	1759,574	14	14	1767,803	14	14	1775,898	14
15	1759,712	15	15	1767,939	15	15	1776,032	2,23
16	1759,850	16	16	1768,075	16	16	1776,166	16
17	1759,988	17	17	1768,211	17	17	1776,299	17
18	1760,127	18	18	1768,347	18	18	1776,433	18
19	1760,265	19	19	1768,483	19	19	1776,567	19
20	1760,403	2,29	20	1768,619	20	20	1776,700	20
21	1760,541	21	21	1768,755	21	21	1776,834	21
22	1760,679	22	22	1768,891	22	22	1776,967	22
23	1760,817	23	23	1769,026	23	23	1777,101	23
24	1760,955	24	24	1769,162	24	24	1777,234	24
25	1761,092	25	25	1769,298	25	25	1777,368	25
26	1761,230	26	26	1769,433	26	26	1777,501	26
27	1761,368	27	27	1769,569	27	27	1777,635	27
28	1761,506	28	28	1769,704	28	28	1777,768	28
29	1761,644	29	29	1769,840	29	29	1777,901	29
30	1761,781	30	30	1769,975	2,25	30	1778,034	2,22
31	1761,919	31	31	1770,111	31	31	1778,167	31
32	1762,057	32	32	1770,246	32	32	1778,301	32
33	1762,194	33	33	1770,381	33	33	1778,434	33
34	1762,332	34	34	1770,517	34	34	1778,567	34
35	1762,470	2,28	35	1770,652	35	35	1778,700	35
36	1762,607	36	36	1770,787	36	36	1778,833	36
37	1762,744	37	37	1770,922	37	37	1778,966	37
38	1762,882	38	38	1771,058	38	38	1779,099	38
39	1763,019	39	39	1771,193	39	39	1779,231	39
40	1763,156	40	40	1771,328	40	40	1779,364	40
41	1763,294	41	41	1771,463	41	41	1779,497	41
42	1763,431	42	42	1771,598	42	42	1779,630	42
43	1763,568	43	43	1771,733	43	43	1779,763	43
44	1763,705	44	44	1771,868	44	44	1779,895	44
45	1763,843	45	45	1772,003	45	45	1780,028	2,21
46	1763,980	46	46	1772,138	46	46	1780,160	46
47	1764,117	47	47	1772,272	47	47	1780,293	47
48	1764,254	48	48	1772,407	48	48	1780,426	48
49	1764,391	49	49	1772,542	49	49	1780,558	49
50	1764,528	2,27	50	1772,677	50	50	1780,691	50
51	1764,665	51	51	1772,811	51	51	1780,823	51
52	1764,801	52	52	1772,946	52	52	1780,955	52
53	1764,938	53	53	1773,080	53	53	1781,088	53
54	1765,075	54	54	1773,215	54	54	1781,220	54
55	1765,212	55	55	1773,350	55	55	1781,352	55
56	1765,349	56	56	1773,484	56	56	1781,484	56
57	1765,485	57	57	1773,618	57	57	1781,617	57
58	1765,622	58	58	1773,753	58	58	1781,749	58
59	1765,759	59	59	1773,887	59	59	1781,881	59
60	1765,895	60	60	1774,022	60	60	1782,013	60

126°			127°			128°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	1782,013	2,20	0	1789,869	2,17	0	1797,588	2,13
1	1782,145		1	1789,998		1	1797,715	
2	1782,277		2	1790,128		2	1797,843	
3	1782,409		3	1790,258		3	1797,970	
4	1782,541		4	1790,388		4	1798,098	
5	1782,673		5	1790,517		5	1798,225	
6	1782,805		6	1790,647		6	1798,352	
7	1782,937		7	1790,776		7	1798,480	
8	1783,068		8	1790,906		8	1798,607	
9	1783,200		9	1791,035		9	1798,734	
10	1783,332		10	1791,165		10	1798,861	
11	1783,463		11	1791,294		11	1798,988	
12	1783,595		12	1791,424		12	1799,116	
13	1783,726		13	1791,553		13	1799,243	
14	1783,858		14	1791,682		14	1799,370	
15	1783,990		15	1791,811		15	1799,497	
16	1784,121		16	1791,941	2,16	16	1799,623	
17	1784,253		17	1792,070		17	1799,750	
18	1784,384		18	1792,199		18	1799,877	
19	1784,515		19	1792,328		19	1800,004	
20	1784,647	2,19	20	1792,457		20	1800,131	2,12
21	1784,778		21	1792,586		21	1800,258	
22	1784,909		22	1792,715		22	1800,384	
23	1785,040		23	1792,844		23	1800,511	
24	1785,172		24	1792,973		24	1800,637	
25	1785,303		25	1793,102		25	1800,764	
26	1785,434		26	1793,230		26	1800,891	
27	1785,565		27	1793,359		27	1801,017	
28	1785,696		28	1793,488		28	1801,144	
29	1785,827		29	1793,617		29	1801,270	
30	1785,958		30	1793,745	2,15	30	1801,396	
31	1786,089		31	1793,874		31	1801,523	
32	1786,220		32	1794,003		32	1801,649	
33	1786,350		33	1794,131		33	1801,775	
34	1786,481		34	1794,260		34	1801,902	
35	1786,612		35	1794,388		35	1802,028	
36	1786,743		36	1794,517		36	1802,154	
37	1786,873		37	1794,645		37	1802,280	
38	1787,004		38	1794,774		38	1802,406	
39	1787,135		39	1794,902		39	1802,532	
40	1787,265	2,18	40	1795,030		40	1802,658	2,11
41	1787,396		41	1795,158		41	1802,784	
42	1787,526		42	1795,287		42	1802,910	
43	1787,657		43	1795,415		43	1803,036	
44	1787,787		44	1795,543		44	1803,162	
45	1787,918		45	1795,671	2,14	45	1803,288	
46	1788,048		46	1795,799		46	1803,414	
47	1788,178		47	1795,927		47	1803,539	
48	1788,308		48	1796,055		48	1803,665	
49	1788,438		49	1796,183		49	1803,791	
50	1788,569		50	1796,311		50	1803,916	
51	1788,699		51	1796,439		51	1804,042	
52	1788,829		52	1796,567		52	1804,168	
53	1788,959		53	1796,695		53	1804,293	
54	1789,089		54	1796,822		54	1804,419	
55	1789,219		55	1796,950		55	1804,544	
56	1789,349		56	1797,078		56	1804,669	
57	1789,479		57	1797,205		57	1804,795	
58	1789,609		58	1797,333		58	1804,920	
59	1789,739		59	1797,461		59	1805,045	
60	1789,869		60	1797,588		60	1805,171	

129°			130°			131°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	1805,171	2,10	0	1812,616	2,06	0	1819,923	2,02
1	1805,296	1	1	1812,738	1	1	1820,043	1
2	1805,421	2	2	1812,861	2	2	1820,164	2
3	1805,546	3	3	1812,984	3	3	1820,284	3
4	1805,671	4	4	1813,107	4	4	1820,405	4
5	1805,796	5	5	1813,230	5	5	1820,525	5
6	1805,921	6	6	1813,352	6	6	1820,646	6
7	1806,046	7	7	1813,475	7	7	1820,766	7
8	1806,171	8	8	1813,598	8	8	1820,886	8
9	1806,296	9	9	1813,720	9	9	1821,007	9
10	1806,421	01	10	1813,843	01	10	1821,128	01
11	1806,546	11	11	1813,966	11	11	1821,247	11
12	1806,671	21	12	1814,088	21	12	1821,367	21
13	1806,795	31	13	1814,210	31	13	1821,488	31
14	1806,920	41	14	1814,333	41	14	1821,608	41
15	1807,045	2,09	15	1814,455	2,05	15	1821,728	2,01
16	1807,169	01	16	1814,578	01	16	1821,848	01
17	1807,294	11	17	1814,700	11	17	1821,968	11
18	1807,419	21	18	1814,822	21	18	1822,088	21
19	1807,543	31	19	1814,944	31	19	1822,207	31
20	1807,668	02	20	1815,067	02	20	1822,327	02
21	1807,792	12	21	1815,189	12	21	1822,447	12
22	1807,916	22	22	1815,311	22	22	1822,567	22
23	1808,041	32	23	1815,433	32	23	1822,687	32
24	1808,165	42	24	1815,555	42	24	1822,806	42
25	1808,289	52	25	1815,677	52	25	1822,926	52
26	1808,414	03	26	1815,798	03	26	1823,046	03
27	1808,538	13	27	1815,921	13	27	1823,165	13
28	1808,662	23	28	1816,043	23	28	1823,285	23
29	1808,786	33	29	1816,165	33	29	1823,405	33
30	1808,910	2,08	30	1816,286	2,04	30	1823,524	2,00
31	1809,034	13	31	1816,408	13	31	1823,643	13
32	1809,158	23	32	1816,530	23	32	1823,763	23
33	1809,282	33	33	1816,651	33	33	1823,882	33
34	1809,406	43	34	1816,773	43	34	1824,002	43
35	1809,530	53	35	1816,895	53	35	1824,121	53
36	1809,654	04	36	1817,016	04	36	1824,240	04
37	1809,778	14	37	1817,138	14	37	1824,359	14
38	1809,902	24	38	1817,259	24	38	1824,479	24
39	1810,026	34	39	1817,381	34	39	1824,598	34
40	1810,149	44	40	1817,502	44	40	1824,717	44
41	1810,273	54	41	1817,624	54	41	1824,836	54
42	1810,397	05	42	1817,745	05	42	1824,955	05
43	1810,520	15	43	1817,866	15	43	1825,074	15
44	1810,644	25	44	1817,988	25	44	1825,193	25
45	1810,767	2,07	45	1818,109	2,03	45	1825,312	1,99
46	1810,891	35	46	1818,230	35	46	1825,431	35
47	1811,014	45	47	1818,351	45	47	1825,550	45
48	1811,138	55	48	1818,472	55	48	1825,668	55
49	1811,261	06	49	1818,593	06	49	1825,787	06
50	1811,384	16	50	1818,714	16	50	1825,906	16
51	1811,508	26	51	1818,835	26	51	1826,024	26
52	1811,631	36	52	1818,956	36	52	1826,143	36
53	1811,754	46	53	1819,077	46	53	1826,262	46
54	1811,877	56	54	1819,198	56	54	1826,380	56
55	1812,000	07	55	1819,319	07	55	1826,499	07
56	1812,123	17	56	1819,440	17	56	1826,617	17
57	1812,247	27	57	1819,560	27	57	1826,736	27
58	1812,370	37	58	1819,681	37	58	1826,854	37
59	1812,493	47	59	1819,802	47	59	1826,973	47
60	1812,616	57	60	1819,923	57	60	1827,091	57

132°			133°			134°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	1827,091	1,98	0	1834,120	1,94	0	1841,010	1,90
1	1827,209		1	1834,236		1	1841,123	
2	1827,327		2	1834,352		2	1841,237	
3	1827,446		3	1834,468		3	1841,351	
4	1827,564		4	1834,584		4	1841,464	
5	1827,682		5	1834,700		5	1841,578	
6	1827,800		6	1834,815		6	1841,691	
7	1827,918		7	1834,931		7	1841,804	
8	1828,036		8	1835,047		8	1841,918	
9	1828,154		9	1835,162		9	1842,031	
10	1828,272		10	1835,278		10	1842,144	1,89
11	1828,390		11	1835,394		11	1842,258	
12	1828,508		12	1835,509		12	1842,371	
13	1828,626		13	1835,625		13	1842,484	
14	1828,744		14	1835,740		14	1842,597	
15	1828,861	1,97	15	1835,856	1,93	15	1842,710	
16	1828,979		16	1835,971		16	1842,823	
17	1829,097		17	1836,086		17	1842,936	
18	1829,214		18	1836,202		18	1843,049	
19	1829,332		19	1836,317		19	1843,162	
20	1829,449		20	1836,432		20	1843,275	
21	1829,567		21	1836,547		21	1843,388	
22	1829,684		22	1836,663		22	1843,501	
23	1829,802		23	1836,778		23	1843,613	
24	1829,919		24	1836,893		24	1843,726	
25	1830,037		25	1837,008		25	1843,839	1,88
26	1830,154		26	1837,123		26	1843,952	
27	1830,271		27	1837,238		27	1844,064	
28	1830,389		28	1837,353		28	1844,177	
29	1830,506		29	1837,468		29	1844,289	
30	1830,623	1,96	30	1837,582	1,92	30	1844,402	
31	1830,740		31	1837,697		31	1844,514	
32	1830,857		32	1837,812		32	1844,627	
33	1830,974		33	1837,927		33	1844,739	
34	1831,091		34	1838,041		34	1844,852	
35	1831,208		35	1838,156		35	1844,964	1,87
36	1831,325		36	1838,271		36	1845,076	
37	1831,442		37	1838,385		37	1845,188	
38	1831,559		38	1838,500		38	1845,301	
39	1831,676		39	1838,614		39	1845,413	
40	1831,793		40	1838,729		40	1845,525	
41	1831,909		41	1838,843		41	1845,637	
42	1832,026		42	1838,958		42	1845,749	
43	1832,143		43	1839,072		43	1845,861	
44	1832,259		44	1839,186		44	1845,973	
45	1832,376	1,95	45	1839,300	1,91	45	1846,085	
46	1832,492		46	1839,415		46	1846,197	
47	1832,609		47	1839,529		47	1846,309	
48	1832,725		48	1839,643		48	1846,420	
49	1832,842		49	1839,757		49	1846,532	
50	1832,958		50	1839,871		50	1846,644	1,86
51	1833,075		51	1839,985		51	1846,755	
52	1833,191		52	1840,099		52	1846,867	
53	1833,307		53	1840,213		53	1846,979	
54	1833,424		54	1840,327		54	1847,090	
55	1833,540		55	1840,441		55	1847,202	
56	1833,656		56	1840,555		56	1847,313	
57	1833,772		57	1840,669		57	1847,425	
58	1833,888		58	1840,782		58	1847,536	
59	1834,004		59	1840,896		59	1847,648	
60	1834,120		60	1841,010		60	1847,759	

135°			136°			137°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	1847,759	1,85	0	1854,368	1,81	0	1860,835	1,78
1	1847,870		1	1854,477		1	1860,942	
2	1847,982		2	1854,586		2	1861,048	
3	1848,093		3	1854,694		3	1861,155	
4	1848,204		4	1854,803		4	1861,261	
5	1848,315		5	1854,912		5	1861,368	
6	1848,426		6	1855,021		6	1861,474	
7	1848,537		7	1855,130		7	1861,580	
8	1848,648		8	1855,238		8	1861,687	
9	1848,759		9	1855,347		9	1861,793	
10	1848,870		10	1855,455		10	1861,899	
11	1848,981		11	1855,564		11	1862,005	
12	1849,092		12	1855,672		12	1862,112	
13	1849,203		13	1855,781		13	1862,218	
14	1849,314		14	1855,889		14	1862,324	
15	1849,424	1,84	15	1855,998		15	1862,430	
16	1849,535		16	1856,106		16	1862,536	
17	1849,646		17	1856,215		17	1862,642	
18	1849,756		18	1856,323		18	1862,748	
19	1849,867		19	1856,431		19	1862,854	
20	1849,978		20	1856,539	1,80	20	1862,959	1,77
21	1850,088		21	1856,647		21	1863,065	
22	1850,199		22	1856,755		22	1863,171	
23	1850,309		23	1856,864		23	1863,277	
24	1850,419		24	1856,972		24	1863,382	
25	1850,530		25	1857,080		25	1863,488	
26	1850,640		26	1857,188		26	1863,594	
27	1850,750		27	1857,295		27	1863,699	
28	1850,861		28	1857,403		28	1863,805	
29	1850,971		29	1857,511		29	1863,910	
30	1851,081	1,83	30	1857,619		30	1864,016	
31	1851,191		31	1857,727		31	1864,121	
32	1851,301		32	1857,835		32	1864,227	
33	1851,411		33	1857,942		33	1864,332	
34	1851,521		34	1858,050		34	1864,437	
35	1851,631		35	1858,158		35	1864,542	
36	1851,741		36	1858,265		36	1864,648	
37	1851,851		37	1858,373		37	1864,753	
38	1851,961		38	1858,480		38	1864,858	
39	1852,071		39	1858,588		39	1864,963	
40	1852,181		40	1858,695	1,79	40	1865,068	1,76
41	1852,290		41	1858,802		41	1865,173	
42	1852,400		42	1858,910		42	1865,278	
43	1852,510		43	1859,017		43	1865,383	
44	1852,619		44	1859,124		44	1865,488	
45	1852,729	1,82	45	1859,232		45	1865,593	
46	1852,838		46	1859,339		46	1865,697	
47	1852,948		47	1859,446		47	1865,802	
48	1853,057		48	1859,553		48	1865,907	
49	1853,167		49	1859,660		49	1866,012	
50	1853,276		50	1859,767		50	1866,116	
51	1853,385		51	1859,874		51	1866,221	
52	1853,495		52	1859,981		52	1866,326	
53	1853,604		53	1860,088		53	1866,430	
54	1853,713		54	1860,195		54	1866,535	
55	1853,822		55	1860,303		55	1866,639	
56	1853,932		56	1860,408		56	1866,743	
57	1854,041		57	1860,515		57	1866,848	
58	1854,150		58	1860,622		58	1866,952	
59	1854,259		59	1860,728		59	1867,056	
60	1854,368		60	1860,835		60	1867,161	

138°			139°			140°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	1867,161	1,75	0	1873,344	1,71	0	1879,385	1,67
1	1867,265		1	1873,446		1	1879,485	
2	1867,369		2	1873,548		2	1879,584	
3	1867,473		3	1873,650		3	1879,683	
4	1867,577		4	1873,751		4	1879,783	
5	1867,682		5	1873,853		5	1879,882	
6	1867,786		6	1873,955		6	1879,981	
7	1867,890		7	1874,056		7	1880,081	
8	1867,994		8	1874,158		8	1880,180	
9	1868,098		9	1874,260		9	1880,279	
10	1868,201		10	1874,361		10	1880,378	1,66
11	1868,305		11	1874,462		11	1880,477	
12	1868,409		12	1874,564		12	1880,576	
13	1868,513		13	1874,665		13	1880,675	
14	1868,617		14	1874,767		14	1880,774	
15	1868,720	1,74	15	1874,868	1,70	15	1880,873	
16	1868,824		16	1874,969		16	1880,972	
17	1868,927		17	1875,070		17	1881,071	
18	1869,031		18	1875,172		18	1881,170	
19	1869,134		19	1875,273		19	1881,268	
20	1869,238		20	1875,374		20	1881,367	
21	1869,341		21	1875,475		21	1881,466	
22	1869,445		22	1875,576		22	1881,564	
23	1869,548		23	1875,677		23	1881,663	
24	1869,651		24	1875,778		24	1881,762	
25	1869,755		25	1875,879		25	1881,860	
26	1869,858		26	1875,980		26	1881,959	1,65
27	1869,961		27	1876,080		27	1882,057	
28	1870,064		28	1876,181		28	1882,155	
29	1870,167		29	1876,282		29	1882,254	
30	1870,270	1,73	30	1876,383	1,69	30	1882,352	
31	1870,373		31	1876,483		31	1882,450	
32	1870,476		32	1876,584		32	1882,548	
33	1870,579		33	1876,684		33	1882,647	
34	1870,682		34	1876,785		34	1882,745	
35	1870,785		35	1876,886		35	1882,843	1,64
36	1870,888		36	1876,986		36	1882,941	
37	1870,991		37	1877,086		37	1883,039	
38	1871,094		38	1877,187		38	1883,137	
39	1871,196		39	1877,287		39	1883,235	
40	1871,299		40	1877,387		40	1883,333	
41	1871,402		41	1877,488		41	1883,431	
42	1871,504		42	1877,588		42	1883,529	
43	1871,607		43	1877,688		43	1883,627	
44	1871,709		44	1877,788		44	1883,724	
45	1871,812	1,72	45	1877,888	1,68	45	1883,822	
46	1871,914		46	1877,989		46	1883,920	
47	1872,017		47	1878,089		47	1884,017	
48	1872,119		48	1878,189		48	1884,115	
49	1872,221		49	1878,289		49	1884,213	
50	1872,324		50	1878,388		50	1884,310	1,63
51	1872,426		51	1878,488		51	1884,407	
52	1872,528		52	1878,588		52	1884,505	
53	1872,630		53	1878,688		53	1884,602	
54	1872,732		54	1878,788		54	1884,700	
55	1872,835		55	1878,887		55	1884,797	
56	1872,937		56	1878,987		56	1884,894	
57	1873,039		57	1879,087		57	1884,991	
58	1873,141		58	1879,186		58	1885,089	
59	1873,242		59	1879,286		59	1885,186	
60	1873,344		60	1879,385		60	1885,283	

141°			142°			143°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	1885,283	1,62	0	1891,037	1,56	0	1896,647	1,53
1	1885,380		1	1891,132		1	1896,739	
2	1885,477		2	1891,226		2	1896,832	
3	1885,574		3	1891,321		3	1896,924	
4	1885,671		4	1891,416		4	1897,016	
5	1885,768		5	1891,510		5	1897,108	
6	1885,865		6	1891,605		6	1897,200	
7	1885,962		7	1891,699		7	1897,292	
8	1886,059		8	1891,793		8	1897,384	
9	1886,155		9	1891,888		9	1897,476	
10	1886,252	1,61	10	1891,982		10	1897,568	
11	1886,349		11	1892,076		11	1897,660	
12	1886,445		12	1892,171		12	1897,752	
13	1886,542		13	1892,265		13	1897,844	
14	1886,638		14	1892,359		14	1897,936	
15	1886,735		15	1892,453		15	1898,027	
16	1886,831		16	1892,547		16	1898,119	
17	1886,928		17	1892,641		17	1898,211	
18	1887,024		18	1892,735		18	1898,302	
19	1887,121		19	1892,829		19	1898,394	
20	1887,217	1,60	20	1892,923		20	1898,485	
21	1887,313		21	1893,017	1,55	21	1898,577	1,52
22	1887,410		22	1893,111		22	1898,668	
23	1887,506		23	1893,205		23	1898,760	
24	1887,602		24	1893,299		24	1898,851	
25	1887,698		25	1893,392		25	1898,942	
26	1887,794		26	1893,486		26	1899,034	
27	1887,890		27	1893,580		27	1899,125	
28	1887,986		28	1893,673		28	1899,216	
29	1888,082		29	1893,767		29	1899,307	
30	1888,178	1,59	30	1893,860		30	1899,398	
31	1888,274		31	1893,954		31	1899,489	
32	1888,370		32	1894,047		32	1899,580	
33	1888,466		33	1894,141		33	1899,671	
34	1888,561		34	1894,234		34	1899,762	
35	1888,657		35	1894,327		35	1899,853	
36	1888,753		36	1894,421		36	1899,944	
37	1888,848		37	1894,514		37	1900,034	
38	1888,944		38	1894,607		38	1900,126	
39	1889,040		39	1894,700		39	1900,217	
40	1889,135	1,58	40	1894,793		40	1900,307	
41	1889,231		41	1894,886	1,54	41	1900,398	1,51
42	1889,326		42	1894,979		42	1900,488	
43	1889,421		43	1895,072		43	1900,579	
44	1889,517		44	1895,165		44	1900,670	
45	1889,612		45	1895,258		45	1900,760	
46	1889,707		46	1895,351		46	1900,851	
47	1889,803		47	1895,444		47	1900,941	
48	1889,898		48	1895,537		48	1901,031	
49	1889,993		49	1895,630		49	1901,122	
50	1890,088	1,57	50	1895,722		50	1901,212	
51	1890,183		51	1895,815		51	1901,302	
52	1890,278		52	1895,908		52	1901,393	
53	1890,373		53	1896,000		53	1901,483	
54	1890,468		54	1896,093		54	1901,572	
55	1890,563		55	1896,185		55	1901,663	
56	1890,658		56	1896,278		56	1901,753	
57	1890,753		57	1896,370		57	1901,843	
58	1890,848		58	1896,463		58	1901,933	
59	1890,942		59	1896,555		59	1902,023	
60	1891,037		60	1896,647		60	1902,113	

144°			145°			146°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	1902,113	1,50	0	1907,434	1,46	0	1912,610	1,43
1	1902,203		1	1907,521		1	1912,695	
2	1902,293		2	1907,609		2	1912,780	
3	1902,382		3	1907,696		3	1912,865	
4	1902,472		4	1907,783		4	1912,949	
5	1902,562		5	1907,871		5	1913,034	
6	1902,652		6	1907,958		6	1913,119	
7	1902,741		7	1908,045		7	1913,204	
8	1902,831		8	1908,132		8	1913,289	
9	1902,920		9	1908,220		9	1913,373	
10	1903,010		10	1908,307		10	1913,458	1,42
11	1903,099		11	1908,394		11	1913,543	
12	1903,189		12	1908,481		12	1913,627	
13	1903,278		13	1908,567		13	1913,712	
14	1903,368		14	1908,654		14	1913,796	
15	1903,457	1,49	15	1908,741		15	1913,881	
16	1903,546		16	1908,828		16	1913,965	
17	1903,635		17	1908,915		17	1914,049	
18	1903,725		18	1909,002		18	1914,134	
19	1903,814		19	1909,089		19	1914,238	
20	1903,903		20	1909,175		20	1914,302	1,41
21	1903,992		21	1909,262	1,45	21	1914,387	
22	1904,081		22	1909,348		22	1914,471	
23	1904,170		23	1909,435		23	1914,555	
24	1904,259		24	1909,521		24	1914,639	
25	1904,348		25	1909,608		25	1914,723	
26	1904,437		26	1909,694		26	1914,807	
27	1904,525		27	1909,781		27	1914,891	
28	1904,614		28	1909,867		28	1914,975	
29	1904,703		29	1909,953		29	1915,059	
30	1904,792	1,48	30	1910,040		30	1915,143	1,40
31	1904,880		31	1910,126		31	1915,227	
32	1904,969		32	1910,212		32	1915,310	
33	1905,057		33	1910,298		33	1915,394	
34	1905,146		34	1910,384		34	1915,478	
35	1905,235		35	1910,471		35	1915,561	
36	1905,323		36	1910,557		36	1915,645	
37	1905,411		37	1910,643		37	1915,729	
38	1905,500		38	1910,729		38	1915,812	
39	1905,588		39	1910,815		39	1915,896	
40	1905,676		40	1910,900		40	1915,979	1,39
41	1905,765		41	1910,986	1,44	41	1916,062	
42	1905,853		42	1911,072		42	1916,146	
43	1905,941		43	1911,158		43	1916,229	
44	1906,029		44	1911,243		44	1916,312	
45	1906,117	1,47	45	1911,329		45	1916,396	
46	1906,205		46	1911,415		46	1916,479	
47	1906,293		47	1911,500		47	1916,562	
48	1906,381		48	1911,586		48	1916,645	
49	1906,469		49	1911,672		49	1916,728	
50	1906,557		50	1911,757		50	1916,811	1,38
51	1906,644		51	1911,842		51	1916,894	
52	1906,733		52	1911,928		52	1916,977	
53	1906,821		53	1912,013		53	1917,060	
54	1906,908		54	1912,098		54	1917,143	
55	1906,996		55	1912,184		55	1917,226	
56	1907,084		56	1912,269		56	1917,309	
57	1907,171		57	1912,354		57	1917,391	
58	1907,259		58	1912,439		58	1917,471	
59	1907,346		59	1912,524		59	1917,557	
60	1907,434		60	1912,610		60	1917,639	

147°			148°			149°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	1917,639	1,37	0	1922,523	1,33	0	1927,261	1,30
1	1917,722		1	1922,603		1	1927,339	
2	1917,805		2	1922,684		2	1927,416	
3	1917,887		3	1922,764		3	1927,494	
4	1917,970		4	1922,844		4	1927,572	
5	1918,052		5	1922,924		5	1927,649	
6	1918,134		6	1923,004		6	1627,727	
7	1918,217		7	1923,084		7	1927,804	
8	1918,299		8	1923,164		8	1927,881	
9	1918,381		9	1923,243		9	1927,959	
10	1918,464		10	1923,323		10	1928,036	
11	1918,546		11	1923,403		11	1928,113	
12	1918,628		12	1923,483		12	1928,191	
13	1918,710		13	1923,562		13	1928,268	
14	1918,792		14	1923,642		14	1928,345	
15	1918,874	1,36	15	1923,721		15	1928,422	
16	1918,956		16	1923,801		16	1928,499	
17	1919,038		17	1923,881		17	1928,576	
18	1919,120		18	1923,960		18	1928,653	
19	1919,202		19	1924,039		19	1928,730	
20	1919,284		20	1924,119	1,32	20	1928,807	1,29
21	1919,365		21	1924,198		21	1928,884	
22	1919,447		22	1924,277		22	1928,961	
23	1919,529		23	1924,357		23	1929,038	
24	1919,611		24	1924,436		24	1929,115	
25	1919,692		25	1924,515		25	1929,190	
26	1919,774		26	1924,594		26	1929,268	
27	1919,855		27	1924,673		27	1929,345	
28	1919,937		28	1924,753		28	1929,421	
29	1920,018		29	1924,832		29	1929,498	
30	1920,100	1,35	30	1924,911		30	1929,574	
31	1920,181		31	1924,989		31	1929,651	
32	1920,262		32	1925,068		32	1929,728	
33	1920,344		33	1925,147		33	1929,804	
34	1920,425		34	1925,226		34	1929,880	
35	1920,506		35	1925,305		35	1929,957	
36	1920,587		36	1925,383		36	1930,033	
37	1920,669		37	1925,462		37	1930,109	
38	1920,750		38	1925,541		38	1930,185	
39	1920,831		39	1925,619		39	1930,261	
40	1920,912		40	1925,698	1,31	40	1930,338	1,28
41	1920,993		41	1925,776		41	1930,414	
42	1921,074		42	1925,855		42	1930,490	
43	1921,154		43	1925,933		43	1930,566	
44	1921,235		44	1926,012		44	1930,642	
45	1921,316	1,34	45	1926,090		45	1930,718	
46	1921,397		46	1926,169		46	1930,794	
47	1921,478		47	1926,247		47	1930,869	
48	1921,558		48	1926,325		48	1930,945	
49	1921,639		49	1926,403		49	1931,021	
50	1921,720		50	1926,482		50	1931,097	
51	1921,800		51	1926,560		51	1931,172	
52	1921,881		52	1926,638		52	1931,248	
53	1921,961		53	1926,716		53	1931,324	
54	1922,042		54	1926,794		54	1931,399	
55	1922,122		55	1926,872		55	1931,475	
56	1922,202		56	1926,950		56	1931,550	
57	1922,283		57	1927,027		57	1931,626	
58	1922,363		58	1927,105		58	1931,701	
59	1922,443		59	1927,183		59	1931,776	
60	1922,523		60	1927,261		60	1931,852	

150°			151°			152°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	1931,852	1,27	0	1936,295	1,23	0	1940,591	1,19
1	1931,927		1	1936,368		1	1940,662	
2	1932,002		2	1936,441		2	1940,732	
3	1932,077		3	1936,514		3	1940,802	
4	1932,152		4	1936,586		4	1940,873	
5	1932,228		5	1936,659		5	1940,943	
6	1932,303		6	1936,731		6	1941,013	
7	1932,378		7	1936,804		7	1941,083	
8	1932,453		8	1936,877		8	1941,153	
9	1932,527		9	1936,949		9	1941,223	
10	1932,602		10	1937,022		10	1941,293	1,18
11	1932,677		11	1937,094		11	1941,363	
12	1932,752		12	1937,166		12	1941,433	
13	1932,827		13	1937,239		13	1941,503	
14	1932,902		14	1937,311		14	1941,573	
15	1932,976	1,26	15	1937,383	1,22	15	1941,642	
16	1933,051		16	1937,455		16	1941,712	
17	1933,126		17	1937,528		17	1941,782	
18	1933,200		18	1937,600		18	1941,852	
19	1933,275		19	1937,672		19	1941,921	
20	1933,349		20	1937,744		20	1941,991	1,17
21	1933,424		21	1937,816		21	1942,060	
22	1933,498		22	1937,888		22	1942,130	
23	1933,572		23	1937,959		23	1942,199	
24	1933,647		24	1938,031		24	1942,269	
25	1933,721		25	1938,103		25	1942,338	
26	1933,795		26	1938,175		26	1942,407	
27	1933,869		27	1938,247		27	1942,477	
28	1933,944		28	1938,318		28	1942,545	
29	1934,018		29	1938,390		29	1942,615	
30	1934,092	1,25	30	1938,462	1,21	30	1942,684	1,16
31	1934,166		31	1938,533		31	1942,753	
32	1934,240		32	1938,605		32	1942,822	
33	1934,314		33	1938,677		33	1942,891	
34	1934,388		34	1938,748		34	1942,960	
35	1934,462		35	1938,819		35	1943,029	
36	1934,535		36	1938,891		36	1943,098	
37	1934,609		37	1938,962		37	1943,167	
38	1934,683		38	1939,033		38	1943,236	
39	1934,757		39	1939,105		39	1943,305	
40	1934,830		40	1939,176		40	1943,373	1,15
41	1934,904		41	1939,247		41	1943,442	
42	1934,978		42	1939,318		42	1943,511	
43	1935,051		43	1939,389		43	1943,579	
44	1935,125		44	1939,460		44	1943,648	
45	1935,198	1,24	45	1939,531	1,20	45	1943,717	
46	1935,272		46	1939,602		46	1943,785	
47	1935,345		47	1939,673		47	1943,853	
48	1935,418		48	1939,744		48	1943,922	
49	1935,492		49	1939,815		49	1943,990	
50	1935,565		50	1939,886		50	1944,059	1,14
51	1935,638		51	1939,956		51	1944,127	
52	1935,711		52	1940,027		52	1944,195	
53	1935,784		53	1940,098		53	1944,263	
54	1935,858		54	1940,168		54	1944,332	
55	1935,931		55	1940,239		55	1944,400	
56	1936,004		56	1940,310		56	1944,468	
57	1936,077		57	1940,380		57	1944,536	
58	1936,149		58	1940,451		58	1944,604	
59	1936,222		59	1940,521		59	1944,672	
60	1936,295		60	1940,591		60	1944,740	

133°			134°			135°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
00	1944,740	1,13	00	1948,740	1,09	00	1952,592	1,05
1	1944,808		1	1948,806		1	1952,655	
2	1944,876		2	1948,871		2	1952,708	
3	1944,943		3	1948,936		3	1952,781	
4	1945,011		4	1949,002		4	1952,843	
5	1945,079		5	1949,067		5	1952,906	
6	1945,147		6	1949,132		6	1952,969	
7	1945,214		7	1949,197		7	1953,032	
8	1945,282		8	1949,262		8	1953,094	
9	1945,349		9	1949,327		9	1953,157	
10	1945,417		10	1949,392		10	1953,220	1,04
11	1945,484		11	1949,457		11	1953,282	
12	1945,552		12	1949,522		12	1953,345	
13	1945,619		13	1949,587		13	1953,407	
14	1945,686		14	1949,652		14	1953,469	
15	1945,754	1,12	15	1949,717	1,08	15	1953,532	
16	1945,821		16	1949,782		16	1953,594	
17	1945,888		17	1949,846		17	1953,656	
18	1945,955		18	1949,911		18	1953,719	
19	1946,022		19	1949,976		19	1953,781	
20	1946,090		20	1950,041		20	1953,843	
21	1946,157		21	1950,105		21	1953,905	
22	1946,224		22	1950,170		22	1953,967	
23	1946,291		23	1950,234		23	1954,029	
24	1946,358		24	1950,299		24	1954,091	
25	1946,425		25	1950,363		25	1954,153	1,03
26	1946,491		26	1950,428		26	1954,215	
27	1946,558		27	1950,492		27	1954,277	
28	1946,625		28	1950,556		28	1954,339	
29	1946,692		29	1950,620		29	1954,400	
30	1946,758	1,11	30	1950,685	1,07	30	1954,462	
31	1946,825		31	1950,749		31	1954,524	
32	1946,892		32	1950,813		32	1954,586	
33	1946,958		33	1950,877		33	1954,647	
34	1947,025		34	1950,941		34	1954,709	
35	1947,091		35	1951,005		35	1954,770	1,02
36	1947,158		36	1951,069		36	1954,832	
37	1947,224		37	1951,133		37	1954,893	
38	1947,291		38	1951,197		38	1954,955	
39	1947,357		39	1951,261		39	1955,016	
40	1947,423		40	1951,325		40	1955,077	
41	1947,489		41	1951,388		41	1955,139	
42	1947,556		42	1951,452		42	1955,200	
43	1947,622		43	1951,516		43	1955,261	
44	1947,688		44	1951,579		44	1955,322	
45	1947,754	1,10	45	1951,643	1,06	45	1955,383	1,01
46	1947,820		46	1951,707		46	1955,444	
47	1947,886		47	1951,770		47	1955,505	
48	1947,952		48	1951,834		48	1955,566	
49	1948,018		49	1951,897		49	1955,627	
50	1948,084		50	1951,960		50	1955,688	
51	1948,150		51	1952,024		51	1955,749	
52	1948,215		52	1952,087		52	1955,810	
53	1948,281		53	1952,150		53	1955,871	
54	1948,347		54	1952,213		54	1955,932	
55	1948,412		55	1952,277		55	1955,992	
56	1948,478		56	1952,340		56	1956,053	
57	1948,544		57	1952,403		57	1956,114	
58	1948,609		58	1952,466		58	1956,174	
59	1948,675		59	1952,529		59	1956,235	
60	1948,740		60	1952,592		60	1956,295	

156°			157°			158°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	1956,295	1,00	0	1959,849	0,96	0	1963,254	0,92
1	1956,356		1	1959,907		1	1963,310	
2	1956,416		2	1959,965		2	1963,365	
3	1956,476		3	1960,023		3	1963,421	
4	1956,536		4	1960,081		4	1963,476	
5	1956,597		5	1960,139		5	1963,631	
6	1956,657		6	1960,197		6	1963,587	
7	1956,718		7	1960,254		7	1963,642	
8	1956,778		8	1960,312		8	1963,697	
9	1956,838		9	1960,370		9	1963,752	
10	1956,898		10	1960,427		10	1963,807	
11	1956,958		11	1960,485		11	1963,862	
12	1957,018		12	1960,542		12	1963,917	
13	1957,078		13	1960,600		13	1963,972	
14	1957,138		14	1960,657		14	1964,027	
15	1957,198	0,99	15	1960,715	0,95	15	1964,082	0,91
16	1957,258		16	1960,772		16	1964,137	
17	1957,317		17	1960,829		17	1964,192	
18	1957,377		18	1960,887		18	1964,247	
19	1957,437		19	1960,944		19	1964,302	
20	1957,497		20	1961,001		20	1964,356	
21	1957,556		21	1961,058		21	1964,411	
22	1957,616		22	1961,115		22	1964,465	
23	1957,675		23	1961,172		23	1964,520	
24	1957,735		24	1961,229		24	1964,575	
25	1957,794		25	1961,286		25	1964,629	
26	1957,854		26	1961,343		26	1964,683	
27	1957,913		27	1961,400		27	1964,738	
28	1957,972		28	1961,457		28	1964,792	
29	1958,032		29	1961,514		29	1964,847	
30	1958,091	0,98	30	1961,571	0,94	30	1964,901	0,90
31	1958,150		31	1961,627		31	1964,955	
32	1958,209		32	1961,684		32	1965,009	
33	1958,269		33	1961,741		33	1965,063	
34	1958,328		34	1961,797		34	1965,117	
35	1958,387		35	1961,854		35	1965,171	
36	1958,446		36	1961,910		36	1965,226	
37	1958,505		37	1961,967		37	1965,280	
38	1958,564		38	1962,023		38	1965,334	
39	1958,623		39	1962,080		39	1965,387	
40	1958,681		40	1962,136		40	1965,441	
41	1958,740		41	1962,192		41	1965,495	
42	1958,799		42	1962,249		42	1965,549	
43	1958,857		43	1962,305		43	1965,603	
44	1958,916		44	1962,361		44	1965,656	
45	1958,975	0,97	45	1962,417	0,93	45	1965,710	0,89
46	1959,033		46	1962,473		46	1965,764	
47	1959,092		47	1962,529		47	1965,817	
48	1959,150		48	1962,585		48	1965,871	
49	1959,209		49	1962,641		49	1965,924	
50	1959,267		50	1962,697		50	1965,978	
51	1959,326		51	1962,753		51	1966,031	
52	1959,384		52	1962,809		52	1966,084	
53	1959,443		53	1962,865		53	1966,138	
54	1959,501		54	1962,921		54	1966,191	
55	1959,559		55	1962,976		55	1966,244	
56	1959,617		56	1963,032		56	1966,297	
57	1959,675		57	1963,088		57	1966,351	
58	1959,733		58	1963,143		58	1966,404	
59	1959,791		59	1963,199		59	1966,457	
60	1959,849		60	1963,254		60	1966,510	

159°			160°			161°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	1966,510	0,88	0	1969,616	0,85	0	1972,571	0,81
1	1966,563		1	1969,666		1	1972,619	
2	1966,616		2	1969,716		2	1972,667	
3	1966,669		3	1969,767		3	1972,715	
4	1966,722		4	1969,817		4	1972,763	
5	1966,774		5	1969,867		5	1972,811	
6	1966,827		6	1969,918		6	1672,859	
7	1966,880		7	1969,968		7	1972,906	
8	1966,933		8	1970,018		8	1972,954	
9	1966,985		9	1970,068		9	1973,002	
10	1967,038		10	1970,119		10	1973,049	
11	1967,090		11	1970,169		11	1973,097	
12	1967,143		12	1970,219		12	1973,144	
13	1967,196		13	1970,269		13	1973,192	
14	1967,248		14	1970,319		14	1973,239	
15	1967,300		15	1970,369	0,84	15	1973,287	0,80
16	1967,353		16	1970,418		16	1973,334	
17	1967,405		17	1970,468		17	1973,381	
18	1967,457		18	1970,518		18	1973,429	
19	1967,509		19	1970,568		19	1973,476	
20	1967,562	0,87	20	1970,617		20	1973,523	
21	1967,614		21	1970,667		21	1973,570	
22	1967,666		22	1970,717		22	1973,617	
23	1967,718		23	1970,766		23	1973,665	
24	1967,770		24	1970,816		24	1973,711	
25	1967,822		25	1970,865		25	1973,758	
26	1967,874		26	1970,915		26	1973,805	
27	1967,926		27	1970,964		27	1973,852	
28	1967,978		28	1971,014		28	1973,899	
29	1968,030		29	1971,063		29	1973,946	
30	1968,081		30	1971,112	0,83	30	1973,993	0,79
31	1968,133		31	1971,161		31	1974,039	
32	1968,185		32	1971,211		32	1974,086	
33	1968,236		33	1971,260		33	1974,133	
34	1968,288		34	1971,309		34	1974,179	
35	1968,340		35	1971,358		35	1974,226	
36	1968,391		36	1971,407		36	1974,273	
37	1968,443		37	1971,456		37	1974,319	
38	1968,494		38	1971,505		38	1974,365	
39	1968,546		39	1971,554		39	1974,412	
40	1968,597	0,86	40	1971,603		40	1974,458	
41	1968,648		41	1971,651		41	1974,505	
42	1968,700		42	1971,700		42	1974,551	
43	1968,751		43	1971,749		43	1974,597	
44	1968,802		44	1971,798		44	1974,643	
45	1968,853		45	1971,846	0,82	45	1974,689	0,78
46	1968,904		46	1971,895		46	1974,736	
47	1968,955		47	1971,944		47	1974,782	
48	1969,006		48	1971,992		48	1974,828	
49	1969,057		49	1972,040		49	1974,874	
50	1969,108		50	1972,089		50	1974,920	
51	1969,159		51	1972,137		51	1974,966	
52	1969,210		52	1972,186		52	1975,011	
53	1969,261		53	1972,234		53	1975,057	
54	1969,312		54	1972,282		54	1975,103	
55	1969,362		55	1972,331		55	1975,149	
56	1969,413		56	1972,379		56	1975,194	
57	1969,464		57	1972,427		57	1975,240	
58	1969,514		58	1972,475		58	1975,286	
59	1969,565		59	1972,523		59	1975,331	
60	1969,616		60	1972,571		60	1975,377	

162°			163°			164°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	1975,377	0,77	0	1978,032	0,73	0	1980,536	0,69
1	1975,422		1	1978,075		1	1980,577	
2	1975,468		2	1978,118		2	1980,617	
3	1975,513		3	1978,161		3	1980,657	
4	1975,558		4	1978,203		4	1980,698	
5	1975,604		5	1978,246		5	1980,738	
6	1975,649		6	1978,289		6	1980,778	
7	1975,694		7	1978,332		7	1980,818	
8	1975,739		8	1978,374		8	1980,859	
9	1975,786		9	1978,417		9	1980,899	
10	1975,830		10	1978,460		10	1980,939	0,68
11	1975,875		11	1978,502		11	1980,979	
12	1975,920		12	1978,545		12	1981,019	
13	1975,965		13	1978,587		13	1981,059	
14	1976,010		14	1978,630		14	1981,099	
15	1976,054	0,76	15	1978,672	0,72	15	1981,139	
16	1976,099		16	1978,714		16	1981,179	
17	1976,144		17	1978,757		17	1981,218	
18	1976,189		18	1978,799		18	1981,258	
19	1976,234		19	1978,841		19	1981,298	
20	1976,278		20	1978,883		20	1981,337	0,67
21	1976,323		21	1978,925		21	1981,377	
22	1976,368		22	1978,968		22	1981,417	
23	1976,412		23	1979,010		23	1981,456	
24	1976,457		24	1979,052		24	1981,496	
25	1976,501		25	1979,094		25	1981,535	
26	1976,546		26	1979,135		26	1981,575	
27	1976,590		27	1979,177		27	1981,614	
28	1976,634		28	1979,219		28	1981,653	
29	1976,679		29	1979,261		29	1981,693	
30	1976,723	0,75	30	1979,303	0,71	30	1981,732	0,66
31	1976,767		31	1979,345		31	1981,771	
32	1976,811		32	1979,386		32	1981,810	
33	1976,856		33	1979,428		33	1981,849	
34	1976,900		34	1979,469		34	1981,888	
35	1976,944		35	1979,511		35	1981,927	
36	1976,988		36	1979,552		36	1981,966	
37	1977,032		37	1979,594		37	1982,003	
38	1977,076		38	1979,635		38	1982,044	
39	1977,120		39	1979,677		39	1982,083	
40	1977,163		40	1979,718		40	1982,122	0,65
41	1977,207		41	1979,759		41	1982,161	
42	1977,251		42	1979,801		42	1982,199	
43	1977,295		43	1979,842		43	1982,238	
44	1977,338		44	1979,883		44	1982,277	
45	1977,382	0,74	45	1979,924	0,70	45	1982,315	
46	1977,426		46	1979,965		46	1982,354	
47	1977,469		47	1980,006		47	1982,393	
48	1977,513		48	1980,047		48	1982,431	
49	1977,556		49	1980,088		49	1982,469	
50	1977,600		50	1980,129		50	1982,508	0,64
51	1977,643		51	1980,170		51	1982,546	
52	1977,686		52	1980,211		52	1982,585	
53	1977,730		53	1980,252		53	1982,623	
54	1977,773		54	1980,292		54	1982,661	
55	1977,816		55	1980,333		55	1982,699	
56	1977,859		56	1980,374		56	1982,738	
57	1977,902		57	1980,414		57	1982,776	
58	1977,946		58	1980,455		58	1982,814	
59	1977,989		59	1980,496		59	1982,852	
60	1978,032		60	1980,536		60	1982,890	

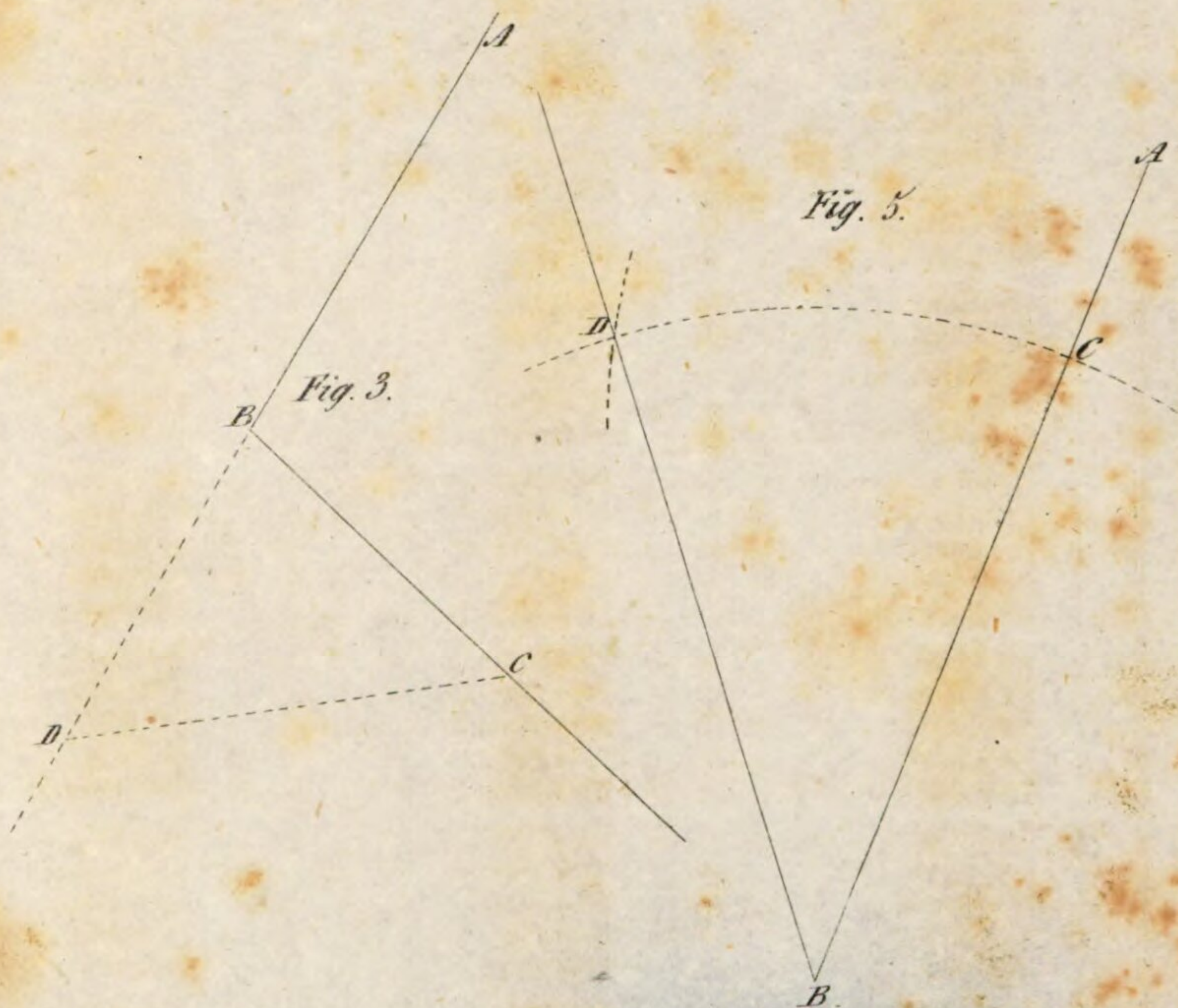
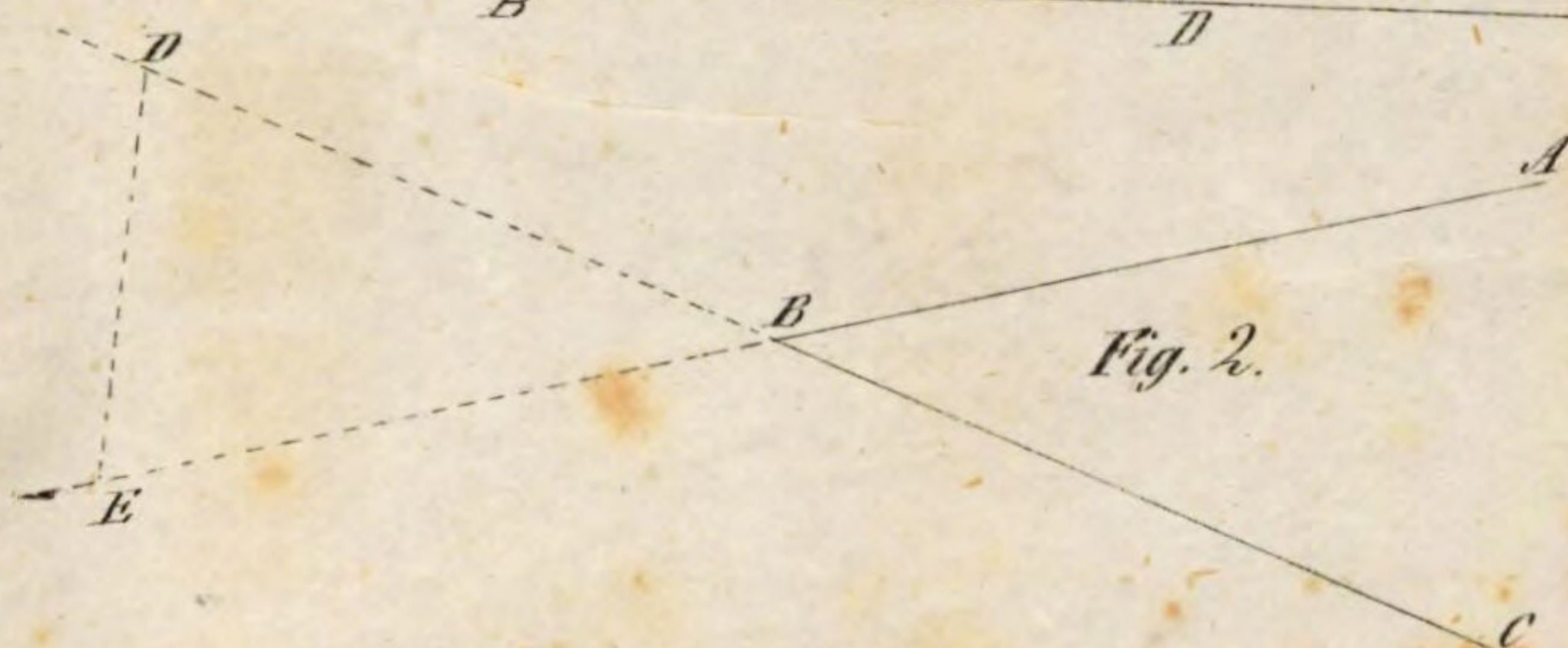
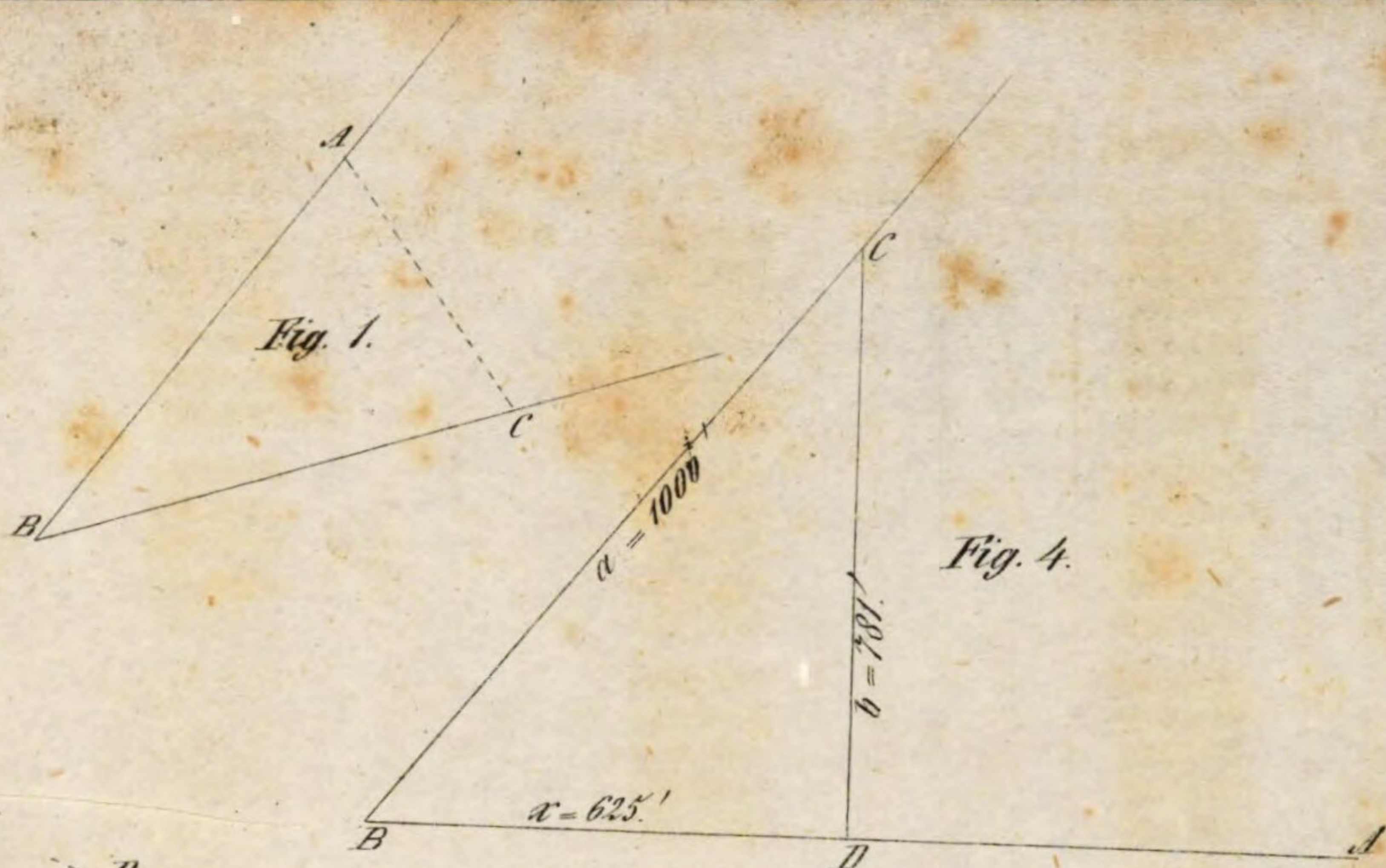
165°			166°			167°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	1982,890	0,63	0	1985,092	0,58	0	1987,144	0,55
1	1982,928		1	1985,128		1	1987,177	
2	1982,966		2	1985,163		2	1987,209	
3	1983,003		3	1985,198		3	1987,242	
4	1983,041		4	1985,234		4	1987,275	
5	1983,079		5	1985,269		5	1987,308	
6	1983,117		6	1985,304		6	1987,341	
7	1983,154		7	1985,339		7	1987,373	
8	1983,192		8	1985,375		8	1987,406	
9	1983,230		9	1985,410		9	1987,438	
10	1983,267	0,62	10	1985,445		10	1987,471	
11	1983,305		11	1985,480		11	1987,504	
12	1983,342		12	1985,515		12	1987,536	
13	1983,380		13	1985,550		13	1987,568	
14	1983,417		14	1985,584		14	1987,601	
15	1983,455		15	1985,619		15	1987,633	0,54
16	1983,492		16	1985,654		16	1987,665	
17	1983,529		17	1985,689		17	1987,697	
18	1983,566		18	1985,724		18	1987,730	
19	1983,604		19	1985,758		19	1987,762	
20	1983,641		20	1985,793	0,57	20	1987,794	
21	1983,678		21	1985,828		21	1987,826	
22	1983,715		22	1985,862		22	1987,858	
23	1983,752		23	1985,897		23	1987,890	
24	1983,789		24	1985,931		24	1987,922	
25	1983,826	0,61	25	1985,965		25	1987,954	
26	1983,863		26	1986,000		26	1987,986	
27	1983,900		27	1986,034		27	1988,017	
28	1983,936		28	1986,068		28	1988,049	
29	1983,973		29	1986,103		29	1988,081	
30	1984,010		30	1986,137		30	1988,113	0,53
31	1984,047		31	1986,171		31	1988,144	
32	1984,083		32	1986,205		32	1988,176	
33	1984,120		33	1986,239		33	1988,208	
34	1984,156		34	1986,273		34	1988,239	
35	1984,193	0,60	35	1986,307		35	1988,271	
36	1984,229		36	1986,341		36	1988,302	
37	1984,266		37	1986,375		37	1988,333	
38	1984,302		38	1986,409		38	1988,365	
39	1984,339		39	1986,443		39	1988,396	
40	1984,375		40	1986,477	0,56	40	1988,427	
41	1984,411		41	1986,511		41	1988,458	
42	1984,447		42	1986,544		42	1988,490	
43	1984,484		43	1986,578		43	1988,521	
44	1984,520		44	1986,611		44	1988,552	
45	1984,556	0,59	45	1986,645		45	1988,583	0,52
46	1984,592		46	1986,679		46	1988,614	
47	1984,628		47	1986,712		47	1988,645	
48	1984,664		48	1986,746		48	1988,676	
49	1984,700		49	1986,779		49	1988,707	
50	1984,736		50	1986,812		50	1988,738	
51	1984,772		51	1986,846		51	1988,768	
52	1984,807		52	1986,879		52	1988,799	
53	1984,843		53	1986,912		53	1988,830	
54	1984,879		54	1986,945		54	1988,861	
55	1984,915		55	1986,979		55	1988,891	
56	1984,950		56	1986,012		56	1988,922	
57	1984,986		57	1987,045		57	1988,952	
58	1985,021		58	1987,079		58	1988,983	
59	1985,057		59	1987,111		59	1989,013	
60	1985,092		60	1987,144		60	1989,044	

168°			169°			170°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	1989,044	0,51	0	1990,792	0,45	0	1993,389	0,42
1	1989,074		1	1990,820		1	1992,415	
2	1989,105		2	1990,848		2	1992,440	
3	1989,135		3	1990,876		3	1992,465	
4	1989,165		4	1990,903		4	1992,490	
5	1989,195		5	1990,931		5	1992,515	
6	1989,225		6	1990,969		6	1992,541	
7	1989,255		7	1990,986		7	1992,566	
8	1989,286		8	1991,014		8	1992,591	
9	1989,316		9	1991,041		9	1992,616	
10	1989,346		10	1991,069		10	1992,641	
11	1989,376	0,50	11	1991,096		11	1992,666	
12	1989,406		12	1991,124		12	1992,691	
13	1989,435		13	1991,151		13	1992,715	
14	1989,465		14	1991,178		14	1992,740	
15	1989,495		15	1991,206		15	1992,765	0,41
16	1989,525		16	1991,233		16	1992,790	
17	1989,555		17	1991,260		17	1992,814	
18	1989,584		18	1991,287		18	1992,839	
19	1989,614		19	1991,314		19	1992,864	
20	1989,643		20	1991,342	0,44	20	1992,888	
21	1989,673	0,49	21	1991,369		21	1992,912	
22	1989,703		22	1991,396		22	1992,937	
23	1989,732		23	1991,422		23	1992,961	
24	1989,761		24	1991,449		24	1992,986	
25	1989,791		25	1991,476		25	1993,010	
26	1989,820		26	1991,503		26	1993,034	
27	1989,849		27	1991,530		27	1993,059	
28	1989,879		28	1991,557		28	1993,083	
29	1989,908		29	1991,583		29	1993,107	
30	1989,937		30	1991,610		30	1993,131	0,40
31	1989,966	0,48	31	1991,636		31	1993,155	
32	1989,995		32	1991,663		32	1993,179	
33	1990,024		33	1991,689		33	1993,203	
34	1990,053		34	1991,716		34	1993,227	
35	1990,082		35	1991,742		35	1993,251	
36	1990,111		36	1991,769		36	1993,275	
37	1990,140		37	1991,795		37	1993,299	
38	1990,169		38	1991,821		38	1993,322	
39	1990,198		39	1991,848		39	1993,346	
40	1990,226		40	1991,874	0,43	40	1993,370	
41	1990,255	0,47	41	1991,900		41	1993,393	
42	1990,284		42	1991,926		42	1993,417	
43	1990,312		43	1991,952		43	1993,441	
44	1990,341		44	1991,978		44	1993,464	
45	1990,370		45	1992,004		45	1993,488	0,39
46	1990,398		46	1992,030		46	1993,511	
47	1990,426		47	1992,056		47	1993,534	
48	1990,455		48	1992,082		48	1993,558	
49	1990,483		49	1992,108		49	1993,581	
50	1990,511		50	1992,134		50	1993,604	
51	1990,540	0,46	51	1992,159		51	1993,628	
52	1990,568		52	1992,185		52	1993,651	
53	1990,596		53	1992,211		53	1993,674	
54	1990,624		54	1992,237		54	1993,698	
55	1990,652		55	1992,262		55	1993,720	
56	1990,681		56	1992,288		56	1993,743	
57	1990,709		57	1992,313		57	1993,766	
58	1990,737		58	1992,339		58	1993,789	
59	1990,765		59	1992,364		59	1993,812	
60	1990,792		60	1992,389		60	1993,835	

171°			172°			173°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	1993,835	0,38	0	1995,128	0,33	0	1996,270	0,30
1	1993,857		1	1995,148		1	1996,287	
2	1993,880		2	1995,169		2	1996,305	
3	1993,903		3	1995,189		3	1996,323	
4	1993,926		4	1995,209		4	1996,340	
5	1993,948		5	1995,229		5	1996,358	
6	1993,971		6	1995,249		6	1996,375	
7	1993,993		7	1995,269		7	1996,393	
8	1994,016		8	1995,289		8	1996,410	
9	1994,038		9	1995,309		9	1996,428	
10	1994,061	0,37	10	1995,329	0,1	10	1996,445	0,29
11	1994,083		11	1995,349		11	1996,462	
12	1994,106		12	1995,369		12	1996,480	
13	1994,128		13	1995,388		13	1996,497	
14	1994,150		14	1995,408		14	1996,514	
15	1994,172		15	1995,428		15	1996,531	
16	1994,194		16	1995,447		16	1996,548	
17	1994,216		17	1995,467		17	1996,565	
18	1994,239		18	1995,487		18	1996,582	
19	1994,261		19	1995,506		19	1996,599	
20	1994,283		20	1995,525	0,32	20	1996,616	
21	1994,305		21	1995,545		21	1996,633	
22	1994,327		22	1995,564		22	1996,650	
23	1994,348		23	1995,583		23	1996,667	
24	1994,370		24	1995,603		24	1996,684	
25	1994,392	0,36	25	1995,622		25	1996,700	0,28
26	1994,414		26	1995,641		26	1996,717	
27	1994,435		27	1995,661		27	1996,734	
28	1994,457		28	1995,680		28	1996,750	
29	1994,479		29	1995,699		29	1996,767	
30	1994,500		30	1995,718		30	1996,783	
31	1994,522		31	1995,737		31	1996,800	
32	1994,543		32	1995,756		32	1996,816	
33	1994,565		33	1995,775		33	1996,833	
34	1994,586		34	1995,794		34	1996,849	
35	1994,608	0,35	35	1995,812		35	1996,865	0,27
36	1994,629		36	1995,831		36	1996,882	
37	1994,650		37	1995,850		37	1996,898	
38	1994,671		38	1995,869		38	1996,914	
39	1994,693		39	1995,887		39	1996,930	
40	1994,714		40	1995,906	0,31	40	1996,946	
41	1994,735		41	1995,925		41	1996,962	
42	1994,756		42	1995,943		42	1996,978	
43	1994,777		43	1995,962		43	1996,994	
44	1994,798		44	1995,980		44	1997,010	
45	1994,819	0,34	45	1995,998		45	1997,026	0,26
46	1994,840		46	1996,017		46	1997,042	
47	1994,861		47	1996,035		47	1997,058	
48	1994,882		48	1996,053		48	1997,073	
49	1994,902		49	1996,072		49	1997,089	
50	1994,923		50	1996,090		50	1997,105	
51	1994,944		51	1996,108		51	1997,120	
52	1994,964		52	1996,126		52	1997,136	
53	1994,985		53	1996,144		53	1997,151	
54	1995,006		54	1996,162		54	1997,167	
55	1995,026		55	1996,180		55	1997,182	
56	1995,047		56	1996,198		56	1997,198	
57	1995,067		57	1996,216		57	1997,213	
58	1995,087		58	1996,234		58	1997,229	
59	1995,108		59	1996,252		59	1997,244	
60	1995,128		60	1996,290		60	1997,259	

174°			175°			176°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	1997,259	0,25	0	1998,096	0,20	0	1998,782	0,17
1	1997,274	1	1	1998,109	1	1	1998,792	1
2	1997,289	2	2	1998,122	2	2	1998,802	2
3	1997,304	3	3	1998,134	3	3	1998,812	3
4	1997,320	4	4	1998,147	4	4	1998,822	4
5	1997,335	5	5	1998,159	5	5	1998,832	5
6	1997,350	6	6	1998,172	6	6	1998,842	6
7	1997,364	7	7	1998,184	7	7	1998,852	7
8	1997,380	8	8	1998,197	8	8	1998,862	8
9	1997,394	9	9	1998,209	9	9	1998,871	9
10	1997,409	0,24	10	1998,221	0,1	10	1998,881	0,1
11	1997,424	11	11	1998,233	11	11	1998,891	11
12	1997,439	12	12	1998,246	12	12	1998,900	12
13	1997,456	13	13	1998,258	13	13	1998,910	13
14	1997,468	14	14	1998,270	14	14	1998,920	14
15	1997,483	15	15	1998,282	15	15	1998,929	0,16
16	1997,497	16	16	1998,264	16	16	1998,939	16
17	1997,512	17	17	1998,306	17	17	1998,948	17
18	1997,526	18	18	1998,318	18	18	1998,958	18
19	1997,541	19	19	1998,330	19	19	1998,967	19
20	1997,555	0,2	20	1998,342	0,19	20	1998,976	0,2
21	1997,569	21	21	1998,354	21	21	1998,985	21
22	1997,584	22	22	1998,365	22	22	1998,995	22
23	1997,598	23	23	1998,377	23	23	1999,004	23
24	1997,612	24	24	1998,389	24	24	1999,013	24
25	1997,626	0,23	25	1968,400	25	25	1999,022	25
26	1997,641	26	26	1998,412	26	26	1999,031	26
27	1997,655	27	27	1998,424	27	27	1999,040	27
28	1997,669	28	28	1998,435	28	28	1999,049	28
29	1997,683	29	29	1998,447	29	29	1999,058	29
30	1997,697	30	30	1998,458	30	30	1999,067	0,15
31	1997,711	31	31	1998,469	31	31	1999,076	31
32	1997,725	32	32	1998,881	32	32	1999,085	32
33	1997,738	33	33	1998,492	33	33	1999,094	33
34	1997,752	34	34	1998,503	34	34	1999,102	34
35	1997,766	0,22	35	1998,515	35	35	1999,111	35
36	1997,780	36	36	1998,526	36	36	1999,120	36
37	1997,793	37	37	1998,537	37	37	1999,128	37
38	1997,807	38	38	1998,548	38	38	1999,137	38
39	1997,821	39	39	1998,559	39	39	1999,145	39
40	1997,834	40	40	1998,570	0,18	40	1999,154	40
41	1997,848	41	41	1998,581	41	41	1999,162	41
42	1997,862	42	42	1998,592	42	42	1999,171	42
43	1997,875	43	43	1998,603	43	43	1999,179	43
44	1997,888	44	44	1998,614	44	44	1999,187	44
45	1997,901	0,21	45	1998,625	45	45	1999,196	0,14
46	1997,915	46	46	1998,635	46	46	1999,204	46
47	1997,928	47	47	1998,646	47	47	1999,212	47
48	1997,941	48	48	1998,657	48	48	1999,220	48
49	1997,954	49	49	1998,667	49	49	1999,228	49
50	1997,967	50	50	1998,678	50	50	1999,236	50
51	1997,980	51	51	1998,689	51	51	1999,244	51
52	1997,994	52	52	1998,699	52	52	1999,252	52
53	1998,007	53	53	1998,709	53	53	1999,260	53
54	1998,020	54	54	1998,720	54	54	1999,268	54
55	1998,032	55	55	1998,730	55	55	1999,276	55
56	1998,045	56	56	1998,741	56	56	1999,284	56
57	1998,058	57	57	1998,751	57	57	1999,291	57
58	1998,071	58	58	1998,761	58	58	1999,299	58
59	1998,084	59	59	1998,771	59	59	1999,307	59
60	1998,096	60	60	1998,782	60	60	1999,315	60

177°			178°			179°		
M.	Sehnen	d. 1"	M.	Sehnen	d. 1"	M.	Sehnen	d. 1"
0	1999,315	0,13	0	1999,695	0,08	0	1999,924	0,04
1	1999,322		1	1999,700		1	1999,926	
2	1999,330		2	1999,705		2	1999,929	
3	1999,337		3	1999,710		3	1999,931	
4	1999,345		4	1999,715		4	1999,934	
5	1999,352		5	1999,720		5	1999,936	
6	1999,360		6	1999,725		6	1999,938	
7	1999,367		7	1999,730		7	1999,941	
8	1999,374		8	1999,735		8	1999,943	
9	1999,381		9	1999,739		9	1999,945	
10	1999,389	0,12	10	1999,744		10	1999,947	
11	1999,396		11	1999,749		11	1999,949	
12	1999,403		12	1999,753		12	1999,951	
13	1999,410		13	1999,758		13	1999,953	
14	1999,417		14	1999,762		14	1999,955	
15	1999,424		15	1999,767	0,07	15	1999,957	0,03
16	1999,431		16	1999,771		16	1999,959	
17	1999,438		17	1999,776		17	1999,961	
18	1999,445		18	1999,780		18	1999,963	
19	1999,452		19	1999,784		19	1999,964	
20	1999,458		20	1999,788		20	1999,966	
21	1999,465		21	1999,793		21	1999,968	
22	1999,472		22	1999,797		22	1999,969	
23	1999,479		23	1999,801		23	1999,971	
24	1999,485		24	1999,805		24	1999,973	
25	1999,492	0,11	25	1999,809		25	1999,974	
26	1999,498		26	1999,813		26	1999,976	
27	1999,505		27	1999,817		27	1999,977	
28	1999,511		28	1999,821		28	1999,978	
29	1999,518		29	1999,825		29	1999,980	
30	1999,524		30	1999,829	0,06	30	1999,981	0,02
31	1999,530		31	1999,832		31	1999,982	
32	1999,537		32	1999,836		32	1999,983	
33	1999,543		33	1999,840		33	1999,984	
34	1999,549		34	1999,844		34	1999,986	
35	1999,555	0,10	35	1999,847		35	1999,987	
36	1999,561		36	1999,851		36	1999,988	
37	1999,567		37	1999,861		37	1999,989	
38	1999,573		38	1999,854		38	1999,990	
39	1999,579		39	1999,858		39	1999,991	
40	1999,585		40	1999,865		40	1999,992	
41	1999,591		41	1999,868		41	1999,992	
42	1999,597		42	1999,871		42	1999,993	
43	1999,603		43	1999,875		43	1999,994	
44	1999,609		44	1999,878		44	1999,995	
45	1999,615	0,09	45	1999,881	9,05	45	1999,995	0,01
46	1999,620		46	1999,884		46	1999,996	
47	1999,626		47	1999,887		47	1999,996	
48	1999,631		48	1999,890		48	1999,997	
49	1999,637		49	1999,893		49	1999,998	
50	1999,643		50	1999,896		50	1999,998	
51	1999,648		51	1999,899		51	1999,998	
52	1999,653		52	1999,902		52	1999,999	
53	1999,659		53	1999,905		53	1999,999	
54	1999,664		54	1999,908		54	1999,999	
55	1999,669		55	1999,911		55	1999,999	0,00
56	1999,675		56	1999,913		56	2000,000	
57	1999,680		57	1999,916		57	2000,000	
58	1999,685		58	1999,919		58	2000,000	
59	1999,690		59	1999,921		59	2000,000	
60	1999,695		60	1999,924		60	2000,000	



1890-1891	1891-1892	1892-1893	1893-1894	1894-1895	1895-1896	1896-1897	1897-1898	1898-1899	1899-1900	1900-1901	1901-1902	1902-1903	1903-1904	1904-1905	1905-1906	1906-1907	1907-1908	1908-1909	1909-1910	1910-1911	1911-1912	1912-1913	1913-1914	1914-1915	1915-1916	1916-1917	1917-1918	1918-1919	1919-1920	1920-1921	1921-1922	1922-1923	1923-1924	1924-1925	1925-1926	1926-1927	1927-1928	1928-1929	1929-1930	1930-1931	1931-1932	1932-1933	1933-1934	1934-1935	1935-1936	1936-1937	1937-1938	1938-1939	1939-1940	1940-1941	1941-1942	1942-1943	1943-1944	1944-1945	1945-1946	1946-1947	1947-1948	1948-1949	1949-1950	1950-1951	1951-1952	1952-1953	1953-1954	1954-1955	1955-1956	1956-1957	1957-1958	1958-1959	1959-1960	1960-1961	1961-1962	1962-1963	1963-1964	1964-1965	1965-1966	1966-1967	1967-1968	1968-1969	1969-1970	1970-1971	1971-1972	1972-1973	1973-1974	1974-1975	1975-1976	1976-1977	1977-1978	1978-1979	1979-1980	1980-1981	1981-1982	1982-1983	1983-1984	1984-1985	1985-1986	1986-1987	1987-1988	1988-1989	1989-1990	1990-1991	1991-1992	1992-1993	1993-1994	1994-1995	1995-1996	1996-1997	1997-1998	1998-1999	1999-2000	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024	2024-2025	2025-2026	2026-2027	2027-2028	2028-2029	2029-2030	2030-2031	2031-2032	2032-2033	2033-2034	2034-2035	2035-2036	2036-2037	2037-2038	2038-2039	2039-2040	2040-2041	2041-2042	2042-2043	2043-2044	2044-2045	2045-2046	2046-2047	2047-2048	2048-2049	2049-2050	2050-2051	2051-2052	2052-2053	2053-2054	2054-2055	2055-2056	2056-2057	2057-2058	2058-2059	2059-2060	2060-2061	2061-2062	2062-2063	2063-2064	2064-2065	2065-2066	2066-2067	2067-2068	2068-2069	2069-2070	2070-2071	2071-2072	2072-2073	2073-2074	2074-2075	2075-2076	2076-2077	2077-2078	2078-2079	2079-2080	2080-2081	2081-2082	2082-2083	2083-2084	2084-2085	2085-2086	2086-2087	2087-2088	2088-2089	2089-2090	2090-2091	2091-2092	2092-2093	2093-2094	2094-2095	2095-2096	2096-2097	2097-2098	2098-2099	2099-2100	2100-2101	2101-2102	2102-2103	2103-2104	2104-2105	2105-2106	2106-2107	2107-2108	2108-2109	2109-2110	2110-2111	2111-2112	2112-2113	2113-2114	2114-2115	2115-2116	2116-2117	2117-2118	2118-2119	2119-2120	2120-2121	2121-2122	2122-2123	2123-2124	2124-2125	2125-2126	2126-2127	2127-2128	2128-2129	2129-2130	2130-2131	2131-2132	2132-2133	2133-2134	2134-2135	2135-2136	2136-2137	2137-2138	2138-2139	2139-2140	2140-2141	2141-2142	2142-2143	2143-2144	2144-2145	2145-2146	2146-2147	2147-2148	2148-2149	2149-2150	2150-2151	2151-2152	2152-2153	2153-2154	2154-2155	2155-2156	2156-2157	2157-2158	2158-2159	2159-2160	2160-2161	2161-2162	2162-2163	2163-2164	2164-2165	2165-2166	2166-2167	2167-2168	2168-2169	2169-2170	2170-2171	2171-2172	2172-2173	2173-2174	2174-2175	2175-2176	2176-2177	2177-2178	2178-2179	2179-2180	2180-2181	2181-2182	2182-2183	2183-2184	2184-2185	2185-2186	2186-2187	2187-2188	2188-2189	2189-2190	2190-2191	2191-2192	2192-2193	2193-2194	2194-2195	2195-2196	2196-2197	2197-2198	2198-2199	2199-2200	2200-2201	2201-2202	2202-2203	2203-2204	2204-2205	2205-2206	2206-2207	2207-2208	2208-2209	2209-2210	2210-2211	2211-2212	2212-2213	2213-2214	2214-2215	2215-2216	2216-2217	2217-2218	2218-2219	2219-2220	2220-2221	2221-2222	2222-2223	2223-2224	2224-2225	2225-2226	2226-2227	2227-2228	2228-2229	2229-2230	2230-2231	2231-2232	2232-2233	2233-2234	2234-2235	2235-2236	2236-2237	2237-2238	2238-2239	2239-2240	2240-2241	2241-2242	2242-2243	2243-2244	2244-2245	2245-2246	2246-2247	2247-2248	2248-2249	2249-2250	2250-2251	2251-2252	2252-2253	2253-2254	2254-2255	2255-2256	2256-2257	2257-2258	2258-2259	2259-2260	2260-2261	2261-2262	2262-2263	2263-2264	2264-2265	2265-2266	2266-2267	2267-2268	2268-2269	2269-2270	2270-2271	2271-2272	2272-2273	2273-2274	2274-2275
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Einsle, Leopold

Sehnen-Tafeln für den Radius oder $r=1000$ enthaltend die zur Bestimmung aller Winkel von 0° bis 180° von Minute zu Minute erforderlichen Sehnen und auch die Proportional-Theile, durch welche die Winkel bis auf einzelne Secunden angegeben werden können; nebst einer Gebrauchsanweisung. Ein zuverlässiges und äusserst einfaches Hilfsmittel für Architekten, Forstbeamte, Geometer, Gnomoniker, Ingenieure, sowie für Lehrer und Schü

Augsburg 1849

Math.p. 120 m

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